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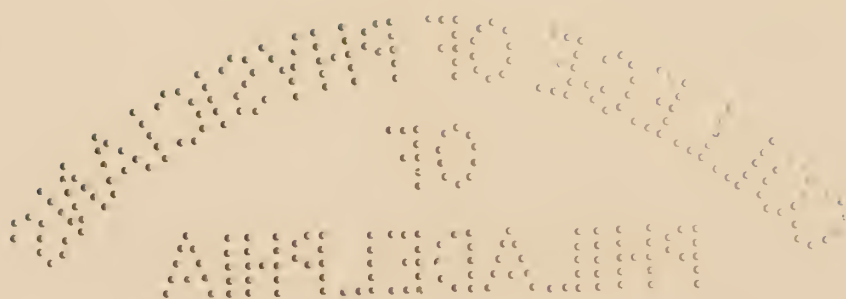


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THE JOURNAL OF
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OTOLOGY
AND
LARYNGOLOGY







J. R. McCLEARY, M. D., O. ET A. CHIR.
CINCINNATI, O.

President of the American Ophthalmological, Otological and Laryngological Society.
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Editorial

THE PRESIDENT

DR. J. R. McCLEARY was born of Scotch parentage at St. Louis, Missouri, in 1875. A few years later he moved to Wellsburg, West Virginia, where he attended the public school, and in 1890, the Lindsey Military Institute at Wheeling, graduating in 1894.

Probably on account of Dr. McCleary's father and both grandfathers being prominent members of the profession of law he became involved in politics, and while serving as first deputy sheriff of Brook County, West Virginia, he was appointed one of the assistant sergeant-at-arms of the National Republican Convention held in Philadelphia in 1899, when McKinley and Roosevelt were nominated.

In 1900 he graduated at Pulte (Homœopathic Medical Department, Ohio State University) Medical College and Hospital, at Cincinnati, Ohio. While a student here he organized the "Round-Table," which later became the Epsilon Chapter of the Alpha Sigma Fraternity. He practiced general medicine at Marietta, Ohio, for four years; then took up the special study of eye, ear, nose and throat at the New York Ophthalmic Hospital, receiving the degree of O. et. A. Chir. While in New York he was resident surgeon at the hospital in the Five Points Home of Industry, and the New York Ophthalmic Hospital. On January 1, 1907, he opened a suite of offices in the Groton Building, Cincinnati, Ohio, for the exclusive treatment of the eye, ear, nose and throat, and two years later moved to the Mercantile Library Building, where he could secure larger quarters.

Dr. McCleary has been a tireless worker in behalf of the advancement of homœopathy and homœopathic medical societies; is ex-president of the West Virginia Homœopathic Medical Society,

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member of the American Institute of Homœopathy, American Homœopathic O., O. & L. Society, Ohio State Society, Kentucky Medical Society, Ohio Valley Medical Society, Miami Valley Medical Society, Cincinnati Lyceum of Medicine. He is also a Thirty-second Degree Mason, Syrian Temple, A. O. N. M. S., of Cincinnati, a member of Cincinnati Business Men's Club, Cincinnati Country Club, Cincinnati Chamber of Commerce, Hyde Park Business Men's Club, Cincinnati Automobile Club, Cincinnati Golf Club, Hamilton County Golf Club.

In August, 1914, when it became necessary for the O., O. & L. Society to make arrangements for the conduct of the *Journal*, Dr. McCleary was selected by the committee to assume the business management. The wisdom of this selection was soon apparent. So well did the business department supplement the able editorship of Dr. Mackenzie that the *Journal* for three years occupied a unique position in the field of medical literature.

This *Journal* incident is interesting apart from itself because it is highly typical of Dr. McCleary. He not merely puts great energy and ability into what he does but he inspires enthusiasm in others. It is easy to work with McCleary, it is impossible not to believe in him. It will be fortunate for the homœopathic school if it shall avail itself of his ability even more largely in the future than in the past.

BURTON HASELTINE.

STANDARDIZED MIDDLE-TONE FORK FOR THE MAKING OF THE WEBER-SCHWABACH RINNE TESTS

THE editor, after considerable experimenting in conjunction with the Standard Scientific Company, of New York, has finally succeeded in the development of a fork that promises to fulfill all the needs of the otologists for making the above tests. Heretofore, no effort has been made to standardize tuning forks. It is hoped that if the Standard Fork should be generally adopted by otologists it would go a great way towards unifying the methods of making these tests, and simplify the interpretation of the findings, so that when an author makes a report of his findings, an-

other author at a distant point could interpret them. The editor wishes to make this announcement in view of the fact that he has been repeatedly asked in the past by otologists where the most suitable fork can be found. G. W. M.

STANDARDIZING THE BLOW TO THE TUNING FORK

DOUGLAS MACFARLAN, B.S., M.D.

A PROPOS of the recent discussions upon the tuning fork tests I have tried to solve for myself one factor towards making methods more standard. This factor is in giving the fork a definite blow to set up vibration of initial identical volume; for it is well known that to an extent the greater the initial amplitude of the waves the longer will the fork be heard. The present procedure of dropping the fork upon the knee is most inexact; the fork in the latter instance may strike a heavily or lightly padded knee; the examiner may actually propel the fork in its descent, or he may be slow to lift the fork free from the knee after it has struck.

To deliver a standard blow I have constructed what I call a "gallows," a short wooden upright screwed to the treatment table. The upright is a foot high and projecting from it is a short horizontal wooden arm into which is screwed an eyelet. A straight piece of standard-sized wire 10 cm. long is fastened by a loop into the eyelet. This swings freely like a rope from a gallows. The wire is stiff; nothing is weighting its free end.

In use the wire is raised to the horizontal and is let go; it strikes the fork held horizontally opposite the base of the gallows and it rebounds, the fork being drawn away.

I have found that the tests have run very uniformly with this simple little apparatus, and I recommend it strongly for trial.

WINTER MEETING OF THE O., O. & L. SOCIETY.

Dear Doctor:

A special meeting of the O., O. & L. Society was held in Cincinnati, Ohio, on November 17, 1921. About twenty-five members were present and plans for the meeting at Chicago were discussed

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and considerable headway made. Another meeting of a number of the men was held in Detroit, November 27th, at which further plans were perfected.

We are going to make the Chicago meeting the best ever. The hotel facilities for the meeting are the finest we have ever had. We are very anxious to have a number of the new men as well as the older ones take some part in this year's meeting.

WE WANT YOU TO TAKE AN ACTIVE PART IN THIS YEAR'S
PROGRAM!

If you will write a paper, present a case report or in any other way contribute to the program, kindly notify the Bureau Chairman and the Secretary immediately.

Do IT NOW!

Fraternally,

NEIL BENTLEY, *Secretary.*

AMERICAN INSTITUTE OF HOMŒOPATHY

ANNUAL MEETING JUNE 18 TO 23, HOTEL DRAKE, CHICAGO, ILL.

THE annual meeting of the American Institute of Homœopathy will be held this year at the Hotel Drake, Chicago, the week of June 18 to 23. The Institute is particularly fortunate this year in having the best equipped hotel it has ever been its good fortune in which to meet.

The bureau chairmen are actively engaged in completing their programs. Dr. A. E. Hinsdale, of the University of Ohio, is to present an abstract of the winter's work in materia medica at that institution in conjunction with his associates.

The Board of Trustees, at a meeting held in conjunction with the Southern Homœopathic Medical Association at Cincinnati on November 16th, determined to have an open meeting of a Public Health Bureau on Tuesday evening of the session. This bureau will be in charge of Commissioner of Health Copeland, of the City of New York, and he has assured the president of the Institute

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that he will have the Chicago Health Commissioner and his associates present contributions on the program that evening.

There are odd minutes which are left to your Executive and Board of Trustees in which they are not occupied with looking after the difficulties in various localities over the country, and during these they are making every effort to secure a scientific program in Chicago that will make the meeting quite the best from a scientific standpoint of any so far held.

Underscore the dates, June 18 to 23, on your calendar, with the words "Hotel Drake, Chicago, Illinois," and write at once for your room reservations.

ROY UPHAM,

President American Institute of Homœopathy.

INTERNAL NOSE MODELS

DESIGNED by Dr. W. A. Fisher, of Chicago, Ill. The models are two in number and are intended to replace wet specimens. They can be used for study with any text on the subject. They are made of rubber, natural in size, practically indestructible, and can be used for study in the physician's office, or for demonstration in the operating room. They make valuable substitutes for the actual specimens which are too often hard to obtain. They should find a ready sale.

Price of the models is \$5.00, postpaid. Chicago Eye, Ear, Nose and Throat College, 235 West Washington Street, Chicago, Ill.

G. W. M.

PEMPHIGUS OF THE CONJUNCTIVA—CASE REPORT*

W. D. ROWLAND, M.D.,

Boston, Mass.

THIS case report is offered because of the relative rarity of pemphigus; its infrequency, therefore, may render the recognition difficult, especially in atypical manifestations. If, then, one has seen a case or has had its characteristics sufficiently called to his attention, the disease may be more readily recognized.

I am going to ask your indulgence in the manner of subject presentation of this case, for I am frank to confess that this is my first case of pemphigus involving the eye, and that I did not know it was pemphigus until after three and one-half months of observation, when a consultant gave me his opinion; then, reasoning backward, it was easily apparent that this case was pemphigus, and the best description covering my case that I have found, is in *Knapp's Medical Ophthalmology, System of Ophthalmic Practice* (Pyle), pp. 453-456. Various textbook discussions of pemphigus, and the report in the *American Journal of Ophthalmology*, July, 1920, by Wm. Campbell Posey, did not lead me to consider pemphigus in my case.

May 12, 1920, Mr. A. E., aet. 67, Swiss by birth, but residing in the United States since early boyhood, resident in suburban Boston, and employed as carpenter and shipper in an ice cream factory, was referred by his family physician for an intractable condition of his eyelids.

HISTORY: Family and past personal history was good and contained nothing relevant to the present circumstance. Present History.—One year ago the right eye became red and irritable, with much lachrymation and some photophobia, but no severe discomfort at any time. This condition spread to the left eye in three months. Previous to this his vision was good. He continued work but was much handicapped recently. After four months from the onset, he applied at an eye dispensary for advice and care, but

*Read at the meeting of the O., O. & L. Society, Washington, D. C., June, 1921.

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discontinued attendance and applied self-treatment for one month. He then presented himself at another eye dispensary; and subsequently was cared for by two private physicians. He described his treatment by these agencies as "drops, salves, and pulling of lashes." Meanwhile, in spite of treatment, his eyes grew worse; vision failed, and being otherwise a healthy and able man, he found difficulty in accomplishing his accustomed duties only because of loss of vision and eye-discomfort.

FINDINGS:—Right eye—Vision 8/200. There was a total inferior symblepharon, and near both inner and outer canthi thickened and contracted bands of conjunctiva held the upper lid to the globe, but the middle half or two-thirds of the upper lid was free even to the depth of a normal cul-de-sac; the conjunctiva was thickened, especially the subconjunctival structures (parenchymatous hyperplasia), quite inelastic and adherent; was beefy red in color, and the surface more or less macerated and covered by strands of tenacious mucus. The cornea was reduced to about 9 mm. in diameter and covered by a vascular, pterygium-like pannus (not subepithelial as in trachoma). The pupil was $1\frac{1}{2}$ mm.; tension was normal. The palpebral fissure was narrowed and distorted, the lid margins displaced and the cilia irritated the cornea and conjunctiva.

Left eye.—Vision 20/200. The inferior cul-de-sac was about one-half obliterated, and the same type of adhesive bands found in the right eye from the inner and outer canthi to the upper lid, were found here to both upper and lower lids. Otherwise the same condition as in the right eye existed, except a 9 mm. cornea was not invaded.

ETIOLOGY AND DIAGNOSIS:—Aside from some unsanitary stumps of teeth there seemed to be no apparent faults. Urinalysis was within normal. Blood Wassermann was negative. Cultures and smears from both conjunctival surfaces showed only staphylococci. His skin was clean. He gave nothing in his history to explain the start of the eye-trouble, except a marked irritation of the eyes while unloading several cars of salt into the basement of the ice cream factory in very hot weather, where he was required to work in the salt as in handling coal, and in poor ventilation. Following this incident his history ensued. Not having available data describing the condition found by previous medical investi-

gation and treatment, and finding nothing more plausible than the salt-irritation, I allowed myself to feel that concentrated caustic action could have started conjunctival lesions which resulted in the scars and symblepharon. Accordingly I planned to first clean up the infection present, and then attempt some plastic procedure to free the adherent lids, and thereby prevent further corneal involvement.

TREATMENT AND COURSE:—The eyes were irrigated sufficiently often daily to keep the surface free of detritus, and mercurochrome 2 per cent. and argyrol 15 per cent. were instilled at times. Cilia were removed as needed. Some slight improvement followed.

June 10th (one month later), I performed, with considerable difficulty because of the adherent conjunctiva, a peridectomy on the right eye, and quite a thinning of the pannus resulted therefrom.

The patient continued to be treated as an out-patient and was seen weekly, at which times negative galvanism was used over the lids to see what effect it would have on the adhesive bands. It seemed to soften them somewhat, but more or less active inflammation existed so that negative galvanism was soon stopped. Positive galvanism was not used because of the low tissue-nutrition. High frequency, vacuum electrode over the lids, after instillations of ichthyol, 10 per cent., in glycerine, was much more efficient in softening the bands, but no apparent headway was made. (Natrium mur. 30x and Kali iodatum were used singly for periods). Aside from temporary benefits from treatments which cleaned the tissues and rendered the lids more movable, slight improvement of vision was experienced for a short time, but soon we lost ground.

By July 10th (two months from first visit) the right cornea, which had cleared some following the peridectomy, was thickly covered again and surface maceration was marked. The left cornea now showed invasion all along the limbus, proceeding gradually with an irregular margin. I had now given up my plan of clearing up the infection and the contemplated plastic operation, and having arrived at the end of my therapeutic road, I advised consultation.

Consultation, August 23rd, with Dr. George Derby, resulted in his opinion that a well-advanced pemphigus existed. His prognosis (for vision) was grave and he advised the use of arsenic in



TAKEN FEB. 1, 1921. SHOWING ADVANCED XEROSIS.

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the form of Fowler's Solution, and sterile oil locally to keep the drying cornea soft.

Then I retracted all my steps mentally, interrogated the patient carefully to ascertain if he had any skin lesions, the classic bullae, and received his assertion that he had never, immediately preceding the eye-trouble, noticed any blisters on the skin in any place, nor in the mouth or nose. Examination the next day, August 24th, by Dr. Wesley T. Lee (dermatologist), revealed no pemphigus skin signs, but a slight maculo-vesicular rash was found over the genitals, due probably to hot weather, and which cleared up in ten days under Mezerium 3x.

By October 20th (five months later), the right cornea was drying and xerosis well under way; vision was down to hand-motion at three feet. The left cornea was practically covered by a pannus following the progressive maceration of the epithelium and upper Substantia propria, and vision was reduced to hand-motion at one foot (20/200, May 12th).

February 1, 1921.—The treatment has been Arsenicum iodatum 2x, 2 b.i.d., and sterile oil at home. At the office visits I have used thiosinamine 10 per cent in glycerine instillations on the xerotic cornea and followed by fifteen minutes of high frequency, which has thinned the corneal scar somewhat. Xerosis is well established in the right eye and a lusterless surface replaces the attractive brightness of the normal eye. The left eye shows xerosis over the lower part of the cornea and conjunctiva, but moist and macerated over the upper area covered by the upper lid. Vision in each eye—good light projection.

SUMMARY.—Comment: Stelwagon defines pemphigus as "An acute or chronic bullous disease characterized by the formation of scanty or numerous irregularly scattered, variously sized, rounded or oval blebs, arising from apparently normal or moderately reddened skin, and which may or may not be accompanied by mild or severe constitutional disturbances."

VARIETIES:—"Acute, chronic or vulgaris, foliaceous, vegetans."

ETIOLOGY:—"Obscure, non-syphilitic, not hereditary, may be manifestation of sepsis, of autotoxic disturbance, peripheral nerve injuries and diseases of the central nervous system, functional or organic."

Knapp explains from the analysis of several observers that often times the conjunctiva is the only seat of the lesion, and that it might better be called Essential Shrinking of the conjunctiva.

This case, during my observation, showed no skin lesions, nor any noticeable changes of the mucosa of the mouth or nose. As for the eye-tissues, no vesicles or bullae were detected, but considering the structure of the conjunctiva necrosis could ensue so quickly that the epithelium might be macerated before bullar formation was produced.

The patient continues in good general health and is quite cheerful, and aside from blindness he is not a sick man. I think we can consider this under the classification of Pemphigus Vulgaris or Chronic Pemphigus, according to Stelwagon; Essential Shrinking of the Conjunctiva with Bleb-formation by Francke; Essential Phthisis of the Conjunctiva by von Graefe.

This case has progressed from first symptoms of irritation to xerophthalmus in eighteen (18) months to two (2) years, following a rather consistent destructive course in spite of treatment and good general health.

DISCUSSION

CHARLES LESLIE RUMSEY, Baltimore, Md.: Our colleague, Dr. Campbell, of St. Louis, reported the first case of Pemphigus Conjunctivae in this country as early as 1878, and stated after a most diligent search, he had found but five cases on record. (This is reported in *Knapp's Archives of Ophthalmology*.) Dr. Ernest S. Hendry reported in *Surgery Gynecology and Obstetrics Journal*, July, 1913, "Bacteriological Finding in a Case of Pemphigus." I became very much interested in this case reported by Dr. Hendry, who, at this time, did my laboratory work. In this case there was marked ulceration of the mucous membrane of the pharynx and larynx resulting from the vesicular eruption with increased salivary and mucous secretions. Over the chest and abdomen were blebs and ulcerated bases due to confluence of ruptured vesicles. It was from blebs on the abdomen that the bacteriological investigations were made. The surface of the bleb was seared and the fluid from the vesicle aspirated. The staphylococcus epidermis albus was obtained from all of these blebs in pure culture on aerobic media. The

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possibility of finding an anaerobic microorganism was considered and cultures were made on human muscle under agar. The growth was extremely slow, one to three weeks elapsing before a small white area was detected on the muscle. The presence of this microorganism in the blebs and the fact that it agglutinated with the patient's serum suggested the possibility of this bacillus being the cause of pemphigus and a vaccine was prepared and administered, with improvement. As the disease is known to show improvement at various stages without medicine, it could not be stated this improvement came on by administration of the vaccine. The patient had to be nourished by nutritive enemas, and finally succumbed to the disease.

Dr. Rowland has presented another interesting case this year which is worthy of our study.

I recall a case of Pemphigus Conjunctiva in Professor von Reus's clinic in the Poliklinik of Vienna in 1894, who calmly stated the most that can be done is to make the patient comfortable. In pemphigus of the conjunctiva, Professor von Reus stated that the conjunctiva is so soft and its anatomy is such that it cannot be lifted up as in the epidermis-forming blebs by the serous exudate. It ruptures immediately and the epithelium of the conjunctiva produced by the rupture of the vesicles becomes covered with a gray coating and leads to scar-formation, while the pemphigus of the skin can heal without leaving scars. Pemphigus of the conjunctiva, I understood from Professor von Reus, is not found in conjunction with the eruptions of pemphigus upon the skin. I recall Professor von Reus further stating that pemphigus of the conjunctiva may coexist with pemphigus of the mucous membrane of the mouth, throat or nose. In Dr. Hendry's case, which I have quoted from the *Surgery Gynecology and Obstetrics Journal*, there were bullae on the chest and abdomen as well as on the pharynx and larynx. Therefore, pemphigus of the skin and mucous membrane could coexist.

Dr. Rowland has brought all the phases of the disease so vividly to our attention with the different lines of treatment, I can add nothing new unless it be to endeavor to secure a vaccine, as such lines of treatment have been efficacious for other diseases.

WM. M. MUNCY, Providence, R. I.: I have had the fortune,

or misfortune, depending on one's point of view, of having recently two cases of pemphigus. One case came under my care when her physician was in service. The cornea of the right eye at that time was covered with a very granular pannus and the cul-de-sac about obliterated. The left eye, though the inflammation was extensive, having caused considerable shrinkage of the conjunctiva, left the center of the cornea clear. This case developed about two years previous to the visit. The disease was first noticed when bullae of the mucous membrane developed around the cavity, left by extracting a diseased molar. Later bullae appeared on the skin of the face. A nervous factor in the case was the fact that her husband and two sons were captains of vessels in the War Zone; the vessel on which her husband sailed was torpedoed and he was unheard of for a number of months.

The shrinkage of the conjunctiva produced an entropion, and epilation of the lashes had been resorted to which caused a sharp stumpy growth of hair. These bristles caused considerable inflammation of the cornea, and hastened as well as increased the formation of the pannus. If the long thin lashes had been left and a bland cerate, such as calendular cold cream had been used, it would have given relief and not produced later symptoms. This was proven in the second case. Later the case fell into other hands and many treatments were resorted to, including radium. Very light exposures of the above were made, but seemed to aggravate rather than help the case. At the time of the last treatment they had to resort to canthotomy in order to see the cornea.

The second case is still under my treatment. The condition was first manifest twenty years ago. It began on the mucous membrane of the mouth; when I first saw her some ten years ago, about one-half of the mucous membrane of the mouth would be denuded at a time; then a week later the first area would be healed and the previous well membrane involved.

Numerous laboratory tests were made, finding contents of these bullae to be sterile. Swabs of the throat gave the ordinary organisms of the mouth. Autogenous vaccines were made a number of times and given without results. The condition extended to the pharynx, larynx and nasal mucosa. A noted advancement occurred during the war, when the patient was actively engaged in war work. It was at this time that the eyes were first involved. When

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ectropion developed the lashes were not removed but a cerate of calendular cold cream was applied, which prevented irritation. Nevertheless, pannus developed in the right eye after the shrinkage of the conjunctiva obliterated the cul-de-sac. Bullae of the skin did not make their appearance until two years ago. A number of specialists saw both cases in Providence and Boston and various treatments were resorted to without favorable results. Needless to say, numerous Wassermanns, urinalyses and physical examinations were made in both cases, with negative results.

About two years ago the Kromayer Lamp treatment was inaugurated. The mucous membrane of the mouth has shown marked improvement. There is much less area involved and the fetor, which was very noticeable, has disappeared. The skin lesions were likewise treated. In treating the conjunctiva of the eye a long quartz rod is used, covering the sides with black paper, so that only the rays at the end are apparent. This allows one to apply the pencil of light to the area of the conjunctiva and cornea involved. Care should be taken not to expose the healthy cornea to the rays for any great length of time. The marked cachexia of the case has disappeared and she has gained some fifteen pounds. The general condition much improved. Nevertheless, there has been some progression in the shrinkage of the conjunctiva; slight advancement in the corneal involvement about one millimeter a year. Though the present treatment is not curative, it has retarded further development and improved the other areas involved.

C. E. WILLIAMS, New York City: I saw one case of Pemphigus Conjunctiva, when associated with Dr. A. B. Norton. The case was far advanced when she came to us. She was very dilatory in coming for treatment, so our experience was very unsatisfactory. There was marked involvement of the nose and the pharynx. We used the high-frequency current and the X-ray flash. Our experience was that one or the other seemed to soften these cicatricial bands of the conjunctiva, though it did not do much to clear up the cornea, which was markedly involved.

JAMES A. CAMPBELL, St. Louis, Mo.: I do not know whether the Society knows it or not; but I reported the first case of Pemphigus Conjunctivae in America forty-one years ago. I have the

report here. In forty-seven years' work I have seen three other cases: One, in private practice, and two, in clinics.

DR. MACKENZIE: Dr. Campbell may we have the reprint as a part of your discussion?

DR. CAMPBELL: Certainly.

PEMPHIGUS CONJUNCTIVAE: REPORT OF A CASE

By James A. Campbell, M.D.

This peculiar affection of the eye is so very rare, that after a most diligent search I have been able to find but five cases* on record. Only a few of the standard authorities on the eye even mention it as a possible complication. Hence the following case may be of interest:

The patient, John S., presented himself to me with the following history: He claimed to be but 62 years old, but from his feebleness and general dilapidated and broken-down appearance, he certainly looked very much older. Four or five months before coming to me, blisters appeared on his right foot, which has continued sore with a succession of blisters ever since. Then blisters appeared on the body, and soon after in the mouth. This condition remained, the blisters coming and going all the time. About the same time that the blisters appeared in the mouth, his eyes began to trouble him, smarting at times and then secreting much water. Soon this secretion became muco-purulent. The lids thickened, and he began to experience much difficulty in opening the eyes, the lids feeling as if they were partially bound down, and to be "so heavy" as the patient expressed it. He was under the care of a physician part of the time, who gave him washes for the eyes; but they steadily grew worse, and the lids began to grow together. After waiting until this union was nearly complete, and he was almost helplessly blind, he groped his way to me.

He was so very feeble, that it was necessary to resort to stimulants to keep him from fainting under a simple examination entirely devoid of pain in any form.

* White Cooper, R. L. O. H. Rep., Vol. I, p. 155.

L. de Wecker, Klinische Monatsbl., 1868, p. 232.

E. Pflueger reports three cases—Klinische Monatsbl., Jan. 1878:

1. Prof. La Segne.
2. Patient in the Hospital St. Louis, in Paris.
3. Kunkel.

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The examination showed a peculiar and very marked Blepharophimosis of both eyes. The lid borders were united from both canthi toward the centre, leaving only a small central opening about the size of a pea, through which, after cleansing away a thick mucopurulent secretion, the transparent cornea could be seen. The lid edges were very much thickened.

A small probe was carefully introduced through the central opening, revealing the following condition:

In the right eye it could be passed under the upper lid, but towards either canthus it met bands of adhesion; while the lower lid was entirely united to the ball, forming a complete symblepharon. In the left eye the probe could be passed a short distance under the upper lid, while toward the outer canthus, broad adhesions stopped its progress. In all other directions there was a diminution of subpalpebral space, showing marked contractions.

At subsequent sittings, with a small but strong pair of probe-pointed scissors, the adherent lid borders of both eyes were carefully separated, thus allowing a more extended examination, when the results as shown by the probe were fully confirmed, viz: The total symblepharon of left lower lid, while membranous bands, extending from about the region of the outer sclero-corneal margins of both eyes bound the lids down to the ball. The palpebral space under the upper lids, while diminished, did not seem to show any bands of adhesion.

The thickening of the lids seemed to be entirely at the expense of the inner layers, as the puncta lachrymalia of both lids were found on the outer lid borders, and lower down than usual.

There was a hypertrophied red thickened appearance of the conjunctiva surrounding, which had a tendency, from superabundance of tissue, to force its way over the cornea, which though diminished in size, still remained nearly transparent in the centre; although on the outer side it was encroached upon by a fold of thickened conjunctival tissue. At the inferior part of the outer canthus of the right eye was a small reddish membranous remnant of some broken-down tissue. The patient informed me that he had felt a smarting pain at this point some days before; but it only lasted for a short time.

No ordinary inflammation of the conjunctiva could have produced this condition. It might have resulted from a burn, a strong

escharotic, or from a trumatic cause. None of these had been present; but from the history of the case, the general condition of the patient, and the presence of pemphigus on the foot, the body and the mouth, it left me but one conclusion, that the eye trouble I had to deal with was the result of pemphigus conjunctivae; and so this was my diagnosis, which was subsequently confirmed by the appearance of a small vesicle on the inner sclero-corneal border of the right eye. This gave way in a short time, breaking down the tissues involved, and implicating the corneal substance itself at that point. This vesicle was but the forerunner of others, which from time to time appeared in the right eye. until now, after three months, only quantitative perception remains.

In the left eye the extension is in the same direction, and the condition is similar, but the progress has been slower.

The principal damage having been done before I saw the case, my attempts at treatment soon resolved themselves into merely an effort to palliate; for the serious and destructive nature of the disease was soon recognized. After separating the lids and dividing all of the adhesions that could with safety be done, a cosmoline unguent was used to prevent them as much as possible from reuniting. As there was a very abundant lachrymal secretion together with a muco-purulent discharge, which was a source of much annoyance and complaint to the patient, I freely divided the canaliculi, which relieved somewhat.

The principal internal remedy used was Arsenic, which at first did not seem to produce any effect; but subsequently his general condition improved a little; yet the form of the disease remained the same, the general pemphigus persistently remaining, and the blisters continuously reappearing.

DR. ROWLAND: I am glad that other members of this Society have had pemphigus cases that were seen early enough to be more certain of the diagnosis. However, I dare say that I have learned more from this atypical case than I shall ever learn again, probably from another case because of the difficulty in knowing just what I had to deal with. It is difficult enough to know what efficient therapy is in these cases, and anything which has been contributed by discussors is quite valuable.

I am glad to know what Dr. Muncy accomplished with the

PEMPHIGUS OF THE CONJUNCTIVA

Kromayer Lamp. In this case we took up the question of radium, but was advised by an able dermatologist that it was not indicated because of the low resistance of the tissues, and that the whole pathologic picture was already that of degeneration; therefore, after radium destruction there was nothing left to rebuild upon. This dermatologist did not mention the Kromayer Lamp in this connection, and I did not have sufficient knowledge of its function to suggest it.

The use of thiosinamine suggested itself for the effect it might have on scar tissue. I felt that it helped somewhat.

Dr. Muncy spoke of the necessity of enlarging the canthi. My case now shows much narrowing of the palpebral fissures, and undoubtedly the skin surfaces, or modified muco-cutaneous tissues, are creeping up toward the corneae so that very little of this structure is visible. Both inferior and superior cul-de-sacs are practically obliterated. There is considerable entropion and the cornea are dry, xerophthalmus.

In answering Dr. Norton's question, the adhesions, so far as I can determine, were in the corners of the lids. When I first saw the case, the inferior cul-de-sac was entirely obliterated and adhesive bands existed at the four corners. I do not know which presented first, and the patient could not tell me. The left eye showed more corner involvement than the lower cul-de-sac; therefore, I suspect the cul-de-sac filled in after the corner structures were involved. The pathology in my case was that of a parenchymatous hyperplasia of the conjunctiva, not an epithelial hyperplasia, but the subepithelial structures were the seat of the overgrowth and subsequent shrinkage into scar formation.

DR. SUFFA, Boston: Of the deep conjunctivae?

DR. ROWLAND: Yes. It belongs to the conjunctiva, but in the deeper structures, not of the epithelium; the subconjunctival layers, if you choose. The puncti were not functioning; there was no sac involvement, and, quite interestingly, there was no epiphora. So along with the conjunctival atrophy, there must have been some changes in the lachrymal glands. Did you (Dr. Suffa) get that in your case?

DR. SUFFA: There was no epiphora.

THE RELATIONSHIP OF THE ENDOCRINE GLANDS TO CONDITIONS AFFECTING THE RESPIRA- TORY PASSAGES*

THOMAS L. SHEARER, M.B., C.M., EDINBURGH; F.A.C.P.

Baltimore, Md.

IT is not so very many years ago that medical students, in the course of their dissection of the human body, examined the thyroid, thymus, supra-renal, pituitary and pineal glands with great curiosity, but with no idea as to the role that they were playing in the organism. Beyond their microscopic structure and the changes in them produced by various pathological conditions, nothing was known concerning their functions. In fact, even as late as fifteen years ago a distinguished Scotch professor of physiology, who visited this country to deliver a lecture on the endocrine glands, criticised severely and ridiculed the views of an American author who is now considered the greatest authority on the subject in the United States.

In the light of comparatively modern researches into the ductless glands, commencing in 1855 with Thomas Addison's description of the syndrome caused by changes in the adrenal glands, and in 1902, Starling's work with the duodenal internal secretion—"secretin"—when he gave us the name "hormone," the initiators or arousers of function, many apparently absurd claims have been proven to be well-founded and of great value in diagnosis and the cure of disease. In the study of these glands, the mechanism governing nutrition, body growth, sexual and mental development, have been slowly but gradually revealed, and foremost in this mysterious chain of vital organs stands out boldly the thyroid gland, about which most is known. The thyroid is one of the chief detoxicating agencies of the body and is also intimately concerned in the immunity-producing mechanism; it favors oxidation and is closely related to the gonads, adrenals, pituitary and thymus. The thyroid is the most important single factor in the direction of the intricate

*Read at the Annual Meeting of the O., O. & L. Society, Washington, D. C., June, 1921.

workings of metabolism, for it has been well affirmed that the gland governs growth and development, controls the breaking down of certain food materials, particularly albumin, and has much to do with the regulation of the complex chemical processes by means of which the cellular wastes are disposed of.

The thyroid hormone also has to do with the power of the body to resist disease, and Sajous was among the earliest to connect its work with the production of immunity. The thyroid is especially susceptible to the toxemias associated with the infectious diseases and the infections—the chief causes of thyroid insufficiency. When we recall the principal intra-cellular functions of the thyroid hormone, it will be easy to understand that aberrations in the production of the chemical messenger not only interfere with the cellular growth, but they derange the essential changes connected with the incessant regeneration of the cells themselves. Their waste products are retained and the effete material is not burned up—facts which may be proved in several ways.

The chief result of this special form of sub-oxidation is the establishment of a condition of cellular infiltration, which varies both in degree and in the number of organs attacked. While the loss of the normal thyroid stimuli may account for many disorders, more clinical symptoms result from the infiltration than from any other single effect of thyroid derangement. Dr. Eugene Hertoghe, of Antwerp, deserves the credit of this discovery. The processes of cell exchange—nutritional and eliminative—influence all parts of the body and, therefore, Hertoghe says: “No tissue is able to escape the results of impoverishment of the thyroid gland.” He believes that the thyroid never can be functionally inefficient without there ensuing immediately an intoxication due to the deficient function in the cells themselves which is maintained by the hormonal “setting in motion” of the cellular chemical processes. They are unable to oxidize their foods and wastes and there follows an accumulation of poisonous substances which cause serious trouble. Sloss, of Brussels, claims that the thyroid hormones have a deaminizing influence and that the hormone of the thyroid is responsible for the oxidation of the precursors of the nitrogenous waste of the body and that there is good evidence of this clinically and physiologically.

Harrover describes this very clearly: “We will presume that

a given cell in any part of the body—for the thyroid influence extends to every corner of the human organism—is not maintaining its normal chemical activities; that it is suffering from what I have called ‘Chemasthenia.’ The cellular activities are lessened, and, as a result of this, the wastes of that cell are not prepared for elimination and are left behind. There then ensues, as a consequence of this, an actual swelling of the cell due to the effort on the part of the body to maintain a normal osmotic tension. In other words, the increased osmotic tension in the cell draws fluids from the other parts of the body, including blood, lymph and the tissue juices, which evens up the tension and, therefore, extends the confines of the cell walls.”

In this connection it is interesting to mention the changes observed in the red blood corpuscles:

“They form about 50 per cent. of the total mass of the blood. They are soft and flexible so that they can readily be driven through capillary channels narrower than themselves without undergoing any permanent change in shape. They are, however, susceptible to changes in size brought about by alteration of the chemical make-up of their fluid environment. Every one is familiar with the osmotic relationships of the red corpuscles whereby they swell or shrink, respectively, in hypotonic or hypertonic solutions. Price-Jones, of the British Medical Research Council, has recently called attention to diurnal variations in the diameter of red cells within the circulation itself, namely, a gradual increase during the day and a diminution during sleep. These changes undoubtedly include a change in the volume of the individual erythrocytes. The variations in diameter, amounting in some cases to as much as 0.6 micron, suggest that the red cells swell and shrink in association with bodily activity. In harmony with this it has actually been observed that violent exercise increases these changes. The probable explanation has been found in the differences in the reaction of the blood, though the details are scarcely known. At any rate, even the red cells are more sensitive to their plasma environment than is commonly supposed.”—*Edit. A. M. A.*, June 11.

Barker believes that high blood pressure appears to depend chiefly on a narrowing of the lumina of the arterioles in the “pre-capillary areas.” Harrower, commenting on this, asks: “May it not be that the infiltrated cells which surround these pre-arteriolar

canals or vessels are pressing upon the channels through which the blood usually flows, thereby reducing the circulation and also increasing the activity of the heart-muscle which is necessary to force the blood through the finest capillary meshes?" Hypertension could easily result from such a condition, in which hypo-thyroidism exists at the same time. The prescribing of small quantities of thyroid is usually followed by a change in the nutrition of these infiltrated areas, and the skin, which heretofore had been puffy, boggy and infiltrated, assumes a more healthy appearance and the various organs become more nearly normal; the circulation is increased and the high blood pressure is often reduced.

The subject of acidosis is closely related to de-mineralization. The adrenals and, in fact, all of the ductless glands, must have the proper amount of the necessary mineral salts in the plasma for the perfect functioning of their structures. Hypothyroidism and hypo-adrenia then also mean de-mineralization, and either thyroid or adrenal feeding will accomplish little in many cases unless we supply these minerals. Most of our activities lead to the production of acid in the tissues (carbonic acid). Howland has shown that "this stream of acid in an adult, in the course of a day, is the chemical equivalent of several hundred cubic centimeters of concentrated hydrochloric acid." In addition there is the large constant elimination of acid, urea and other wastes through the kidneys; there is the detoxicating action of the liver, the circulation of hormones and enzymes, and the many known and unknown chemical changes necessary to continue life and the maintenance of the stability of the nucleus of the protein molecule, which must be preserved in the colloid state during life. I should like to mention briefly a few cases by way of illustration of the effect of hypothyroidism upon the upper air-passages.

Miss G.; aet. 25 years.—Patient enjoyed fairly good health until two years ago, but she was never strong. Her menses had been rather free and prolonged. She came to me complaining of severe attacks of sneezing with a profuse watery nasal discharge and headache, the nasal symptoms usually being more pronounced at night and accompanied by difficulty in breathing, both nasal and bronchial. Palpitation, with an oppressed sensation over the pre-cordial region, was nearly always present with the coryza symptoms; the patient was very nervous, suffered from weakness and

was below her normal weight; she was not well-nourished. The appetite was poor and she felt miserably—rather disheartened and discouraged about herself.

An examination of the upper air-passages did not reveal anything suggestive of any sinus involvement or of anything requiring operative interference; but, what was most important, it was observed that the mucous membrane over the turbinates was puffy and somewhat swollen. Another point was that these nasal crises ending in excessive secretion were apt to occur during the spring and the fall of the year. As the calcium and iodine content of the thyroid gland varies at different seasons, it was most natural that one would be inclined to look for an explanation of these above-mentioned symptoms in a condition of sub-oxidation due to a state of hypothyroidism. The appearance of the nasal membrane carried out the idea of cellular infiltration which, no doubt, also involved the bronchial membrane and the heart; the poor digestive ability with loss of weight also pointed to the accumulation of waste products in the area of the liver and other organs concerned. Acting upon this view, one grain of the powdered thyroid gland substance was prescribed twice daily after meals. In a few weeks the patient improved in every particular; the palpitation gradually ceased, oppression in the chest passed away, the nasal discharge and sneezing stopped, the feelings of nervousness and excessive debility were relieved and finally she gained in weight. At present she is very well.

Mrs. R.; aet. 56 years.—She had had some of the diseases of childhood, but, with the exception of occasional attacks of cystitis—some of them severe and long-lasting—she had had very little to complain of after reaching adult age. For about one year the patient has been troubled with noises in the ears, worse at night, and coupled with these symptoms was a sense of great weakness and inability to exert herself; unable to walk any considerable distance; in fact, a few city blocks represented her longest walk. She had also a good deal of difficulty with the bladder, urinating very frequently during the day and night, sometimes with pain and often without any distress. Her skin was dry and harsh. There was no indication of arteriosclerosis or of any heart or kidney lesion. The blood pressure was: Systolic, 140; diastolic, 80; pulse, 72. She had been increasing in weight, was very nervous and slept

rather badly—very brokenly. The thyroid gland was small, but across the lower part of the trachea, lying transversely, was a roll of fat which gave the appearance of an hypertrophied gland; this is often an indication of hypothyroidism.

An examination of the ears did not reveal anything abnormal that could account for the tinnitus, which seemed to be her most annoying symptom. As the indications in this case were very plain, one grain of the powdered thyroid was given twice daily after meals, combining the powder with five grains of calcium phosphate and the other minerals required by an exhausted gland. The patient responded well, sleeping better, having less aural noise; the weakness diminished to such a degree that she was able to go shopping—which she had not done for many a day.

Harrower explains the bladder symptoms, as above outlined, as caused by cellular infiltration, the diseased surface-cells being thrown off so rapidly as to produce increased sensitiveness to the urine and demand frequent emptying of the organ. However this may be, there is a point upon which some emphasis should be laid, and that is, in such cases where thyroid therapy is employed, it is necessary to watch for evidence of bladder-irritation or increased frequency, because thyroid substance is a diuretic. If such irritation occurs discontinue the thyroid for a while, and then begin with a sixteenth of a grain and increase the dose if required. This is a digression, but every point which bears upon the indications for prescribing thyroid is worth while and its contra-indications should also receive consideration.

Lastly, there is the case of Mrs. S.; aet, 30 years, a singer. Ever since her childhood she has had exceptionally good health until two years ago, when she began to be very nervous, to have a very rapid pulse-rate and with these symptoms came a pronounced enlargement of the thyroid gland. This swelling increased to such an extent that an operation was necessary to relieve the sensation of suffocation from tracheal pressure. She gradually improved until the pulse-rate fell to normal, and the symptoms of nervousness subsided to a great extent. However, about two months ago she consulted me in reference to an almost incessant, irritating nasal discharge, and also because in singing she was not able to take a high note such as G, A, B above the staff.

An examination of the nose showed the right chamber clear

of any obstruction, the left side—owing to a slight septal deflection—smaller than the right side. The mucous membrane appeared boggy on both sides, and was discharging freely a clear secretion. There was a moderate enlargement of the adenoid tissue, which, however, was infected. The larynx and the region of the lingual tonsil were normal. Externally, the region of the thyroid gland revealed a transverse scar, which was the result of the operation on the thyroid to relieve her symptoms of hyperthyroidism. I removed the adenoid tissue and as soon as the part was healed she was placed upon small doses of thyroid substance. The reason for prescribing this was the belief on my part that, after the operation on the gland the available amount of hormone was not sufficient to meet the body-needs, and defective oxidation with cellular infiltration was taking place. At all events, the patient improved under this medication. While the removal of the adenoids assisted her materially in reaching her higher notes, it was not until the nasal discharge was relieved that she could sing the higher “B”—above the staff. It is possible that later on she may have to stop the thyroid and substitute for it the anterior pituitary compound, which contains only 1/12 grain of thyroid, with thymus and the calcium phosphate powder.

It so happens that the cases above-mentioned in this paper were relieved by thyroid gland alone, just as others may require adrenalin or some of the other gland preparations singly prescribed, but there are frequently encountered instances which apparently, in the limited light of our knowledge, demand pluri-glandular therapy to improve or cure the condition existing. It is my feeling, however, that when we shall have studied the endocrine subject more closely the physician will be able to discriminate to a finer degree in the selection of his internal secretion gland remedy; these glands are so interdependent, one on the other, that it is difficult to decide exactly to what extent each or any endocrine structure is most at fault in its work. Investigation in this field should yield wonderful results when employed in the specialties of medicine.

DISCUSSION

J. B. GARRISON, New York, N. Y.: Dr. Shearer has fittingly written of some of the uses to which the endocrines may be properly

prescribed, and his clinical cases related evidence that there are many respiratory complaints due to the lack of certain glandular secretions. These extracts, like all of our remedies, need careful selection to suit the individual at hand, and must not be used for any named disease merely because someone has related a case cured thereby. In a recent issue of the *Journal of the A. M. A.*, editorial notice is taken of the "disappointments of endocrinology," and it is a fortunate thing that a so widely read medical journal gives space to such warning. Personally, I have not had a great experience in the use of these remedies; but still I have used some with great pleasure, both to myself and to the patient. Hyperthyroidism with considerable dyspnoea has been cured in a short time by the use of the 12x trit. of thyroid (B. & T.). With me that potency has been more helpful than when I have used the 3x or lower. I have given it in small doses not oftener than three times daily.

DR. JOSEPH S. HEPBURN, Constantine Hering Laboratory, Hahnemann Medical College, Philadelphia, Pa.: My experience with endocrinology has been based on work done in collaboration with my colleague, Dr. Harry M. Eberhard, of the Department of Gastroenterology. We have determined the basal metabolic rate, and have also made the dextrose tolerance test and the Goetsch test. The results obtained in all three of these tests depend largely upon the activity of the thyroid in producing its internal secretion. We hope to report more fully on our work before the Bureau of Clinical Medicine on Thursday or Friday, but a brief outline of some of our findings may be of interest to you.

One case that was rather obscure was a girl of twenty-one who had normal intelligence, but was rather listless and inert. She had suffered from frequently recurring attacks of diarrhoea, due to colitis, practically all her life. She did not recover under the usual treatment. On account of her neurotic symptoms, her basal metabolism was determined and was found to be minus 16.3 per cent., whereas minus 10.0 per cent. is the lowest possible normal value. She was distinctly hypothyroid; and desiccated thyroid gland was the indicated remedy. This was administered for several weeks. Her basal metabolism was then again determined, and the rate was found to be exactly normal, having neither a minus nor

a plus value. Her colitis had ceased entirely, and she showed a marked improvement in every way.

Another of our cases was a man in whom hyperthyroidism had produced such a loss of control that the whole bed shook when he sat up, and he was unable to keep his mouth closed; in fact, we had to have a nurse hold his mouth shut on the mouthpiece of the basal metabolism apparatus before we could obtain any results. He had a violent heart beat, and a basal metabolic rate of plus 84 per cent., whereas plus 10.0 per cent. is the highest possible normal value. After X-ray treatment, his basal metabolic rate decreased to 30 per cent.; he had regained control over himself and was able to retain the mouthpiece of the apparatus in his mouth in a satisfactory manner throughout the entire test without any assistance, and had gained seventeen pounds in weight. He is still undergoing treatment. Whereas he was a nervous wreck, he is now again able to attend to his business.

Another point is that the determination of the basal metabolic rate enables one to distinguish whether a goitre is toxic or non-toxic, toxic goitres being characterized by hyperactivity of the thyroid, and an abnormally high metabolic rate.

The dentists are working on the endocrines, and have been doing so for more than a decade. Every two or three months an article on the relation of the endocrines to the diseases of the teeth appears in the dental journals. The claim has been made that extirpation of the parathyroids renders the teeth more brittle and more susceptible to caries. Study has been made in England concerning the influence exerted upon the teeth by disturbances of the ductless glands; and a pluriglandular preparation has been used in the therapy of dental caries. The results of this research appeared in the *British Dental Journal* last year, and have been reprinted in the *Dental Cosmos* for the current year. The endocrines act by means of their internal secretions or hormones, such as thyroxin, the active principle of the thyroid, which has been isolated by Kendall, of the Mayo Clinic, and has been used successfully as a therapeutic agent.

The vitamins, like the hormones, exert a marked action in minute dosage and have a bearing not only on medicine in general, but also on its subdivision dentistry. If a diet be satisfactory in all respects save its vitamin content, a deficiency disease nevertheless

THE RELATIONSHIP OF THE ENDOCRINE GLANDS, ETC.

occurs. Thus lack of fat-soluble A causes a type of xerophthalmia, lack of water-soluble B gives rise to beriberi, and lack of water-soluble C produces scurvy. Researches made at Johns Hopkins University, and reported at a recent meeting of the Academy of Stomatology of Philadelphia, show that a diet deficient in vitamins may give rise to a diseased condition not only of the bones but also of the teeth.

The more we study the ductless glands and the vitamins, the broader the field becomes. The surface of the ground has barely been scratched.

H. S. WEAVER, Philadelphia: I have just a few words to say. I am sorry that Dr. Korndorfer is not here this morning to discuss this paper, because he has made such a thorough study of the subject that he could have given us valuable information. He has been taking this up, and we have had a few cases together. One case in particular, I am not going to report it in full, but will give you an idea of what he is doing. You know how little we could do for our albino cases, those cases that come in perfectly white, with no color in their skin, their hair, or their eyelashes, and with the eyes showing nystagmus. I had one such case that I sent to Dr. Korndorfer, knowing how little we could do with it in our line of medicine. I sent this patient to him a year ago and it has been very instructive to me to watch the progress of the case with him since he started to treat it. The boy was six and a half years of age when he came to me. He was a perfect albino, with no color in his hair or eyelashes. There was constant nystagmus, and you could not get a light reflex with the ophthalmoscope. He had practically no vision. Dr. Korndorfer went over him carefully and prescribed pituitary whole gland, half a grain twice a week, on Wednesday and Sunday. That was a grain a week. I saw the boy on Sunday, a week ago. His hair at the present time, after only four months of treatment, has changed in color to such an extent that he looks like a case of sunburnt hair, such as you often see in the summer. Its color is a sort of dirty, bleached-out brown. The eyes have commenced to change in color. The nystagmus was so marked that you could not get a light reflex; but you can examine the fundus now. They sent him to school, and the teacher inquired what they were doing for the boy, on account of the improvement that she

could see in his studies. She noticed something that we had not noticed before, and that is that the color of his iris was changing. I noticed it when he was in my office last Sunday. He was commencing to get a perfect blue eye. I intend to take this and another case that Dr. Korndorfer is treating, and report them in detail at our next meeting. I did not hear Dr. Shearer's paper, but I want to caution those who are using thyroid against giving it in too large doses. The trouble has been that the dosage has been too large; I had a case calling for thyroid during the winter, and I gave one tablet of the third decimal titration four times a day. At the end of four days he came in with a thyroid rash—one of those intensely itching rashes that almost set the man crazy. He blamed it on the medicine. I laughed, and said that I did not think that had anything to do with it. I thought it was just psychic. He said that he was willing to undergo a part of the itching, because his improvement had been so marked in his general health; he suggested that I reduce the dose. He will stand one-thousandth of a grain each night; and as for improvement, you could not ask for anything better than the amount that he has made in two months.

In regard to the pituitary, I want to give you a hint about its use in the treatment of sinus disease. In acute sinusitis, it is one of the most valuable remedies that we have, especially if you get the pituitary type of patient. I had six cases of acute sinusitis that came in on a cold day last winter, after one of our sudden changes in the weather. I had been talking with one of the men from New York, who had been over here to address our society on the endocrines. During the evening, he brought out the subject of the use of pituitary extract in cases of acute sinusitis. I thought it would be a good thing to give pituitary in these six cases, and my results were more than I could possibly have asked for in the relief of the pus condition. In many cases, the pus will simply subside. I was very anxious about one of my older patients, whom I had treated for a number of years at various times, and who had one of the most acute antral exacerbations that I have seen for a number of years. The discharge was so profuse that when I introduced the canula through the naso antral wall into the antrum the pus simply dropped out in a stream. That cleared up, with normal saline washing and the pituitary; in about four or five days, the antrum was absolutely clear. This was a chronic case with an acute

exacerbation. I had treated the patient for the chronic condition, and I thought that the acute condition superimposed upon it would require months of treatment. I gave half a grain of the whole pituitary gland three times a day. Sometimes I push it up to a grain, night and morning, or even a grain three times a day; but in these acute sinus cases, it has been one of the most valuable remedies that I have ever used.

QUESTION: How old was the albino?

DR. WEAVER: About six years and a half.

QUESTION: Was it a congenital condition?

DR. WEAVER: Yes; it was a typical pituitary case, because we had in the mother's side a cancer, and on the father's tuberculosis, with the typical pituitary type of patient. In going over the cases, the men of the dominant school used to laugh at us for differentiating symptoms as we did; but if you will attempt to compare their way of questioning these patients and putting them through their catechism, in differentiating between the various endocrines, with our mode of questioning, you will find that ours could not be compared in the least to the questions they ask.

H. L. SCHENCK, Brooklyn, N. Y.: Dr. Taylor and one or two of the old school men in New York, in giving their remedies, run up as high as the thirtieth, and claim that they get better results from these higher potencies than we do from the lower ones.

I. O. DENMAN, Toledo, O.: I shall not presume to discuss this paper, but it seems to me that the closing remarks of the Professor describe the situation. The surface has only been scratched. It is perfectly possible to speculate on the far-reaching effects of endocrine derangements. An enthusiast might almost take the position that if an individual should always breathe pure air and have a perfect diet, including all the necessary vitamins, which lead to perfect metabolism, he would never be sick. In that case, would there ever be any work for the eye, ear, nose and throat man or for the internist? Of course that is an extreme view; but to take that view and reason back from it clearly shows us how much there is yet to be learned and applied in our every-day practice. How often we see only the effects and recognize them as primary diseases, when they are only the effects of some derangement of the past that has become a chronic pathological condition.

This paper is a classic, and the discussions all fit in so nicely that I want to make a motion that we request our president to make an early publication of this paper and discussion, so that we may have it before us.

DR. SHEARER: In prescribing these glandular preparations, great attention to details and to measurement of the dose is necessary.

DR. WEAVER: In prescribing hormatone you give your remedies in combination, and do not know where you are at. It is a shot-gun prescription.

JAMES A. CAMPBELL, St. Louis, Mo.: I should have been glad to hear some remarks on the action of the thyroid on the eye. In exophthalmic goitre, why do not some large doses effect the eye, while some small ones do? I have been interested in the paper because it is on a subject that we are all looking forward to with interest in the future. I have had great success with high-frequency electricity and thyroid, locally, in these cases, during the last sixteen years.

FRACTURE OF THE CRICOID CARTILAGE.—H. O. Wildenskov, *Ugeskrift für Læger*, Copenhagen, July 21, 1921; *Abstr. Jour. A. M. A.*, Sept. 24, 1921. The author's patient, a girl of ten years, presented a bulging of the neck after an accident which showed that probably the larynx had been ruptured. Dyspnea or cyanosis was absent, but the cricoid cartilage was tender. High tracheotomy showed sagittal rupture of the cricoid cartilage along the median line. The tracheotomy tube was introduced, and healing proceeded smoothly, the laryngoscope soon showing normal conditions. Isolated fracture of the cartilage is rare. The author states that only six cases are known in children under six years. If the mucous membrane is not torn, the symptoms are very slight. The patient should be brought immediately to the surgeon. H. L. G., JR.

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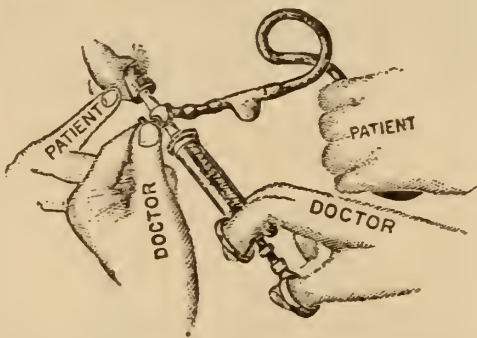
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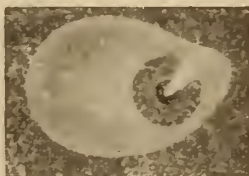
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Editorial

MACEWEN AS AN "AUTHORITY ON INTRACRANIAL COMPLICATIONS"

RECENTLY the editor had occasion to prepare a paper on the subject of the intracranial complications of middle-ear supuration. In referring to the literature he found that the best exposition of the subject is to be found in MacEwen's work, to which the editor has frequently referred in the past. Since MacEwen's work is out of print it occurred to him that it would be appropriate under the circumstances to extract from his book a few pages relative to the subject, assigning to it a prominent place in the *Journal*. Quoting from MacEwen:*

"Various intracranial lesions which may result from pathogenic and saprophytic causes and the manner in which organisms reach the intracranial structures.

"(1) If the inflammatory process be slow, mild, and distinctly localized, involving a portion of the inner table of the skull, then an external pachy-meningitis may form, possibly with pus between the dura mater and the bone, producing an extradural abscess.

"(2) Should this condition persist, adhesive inflammation is apt to spread to the inner side of the dura, which may result in a soldering of the inner membranes, the subjacent arachnoid, and even the pia becoming adherent by the fibrinous meshes of the plastic exudation. Once this occurs general lepto-meningitis is guarded against in the same way as general pleurisy is prevented from following abscess in the lung, by that adhesive inflammation which

*In presenting this important phase of the subject the writer feels that he is performing a better service to the cause of otology as well as justice to the man to quote him literally rather than attempt a recitation of MacEwen's revelations in the writer's own words, a costly offense which most of us are prone to commit.

sometimes solders the visceral and parietal layers of the pleura, only in this case the inflammation spreads from within outwards, in the other, from without inwards. It is possible, however, that in certain brain conditions the inflammation might come from within. This localized soldering of the membranes, once the adhesion has become firm, may act as a barrier to the ingress of fresh infective matter to the general subdural cavity and to the brain itself.

“(3) After adhesive inflammation has brought about a localized soldering of the soft membranes to the dura, should an increase of the inflammatory action take place sufficient to induce a degenerative inflammation, those membranes with their inflammatory effusion may soften and in the subdural space pus may form, which is prone to be followed by disintegration of the pia and sequent superficial ulceration of the brain tissue. Two conditions may thus result. Should the pia mater remain intact, a subdural abscess may form; should the process extend to purulent softening of the pia and adjacent brain tissue, then cerebral ulceration ensues, the disintegrating products being confined peripherally by the membranes, and by the brain on the inside. In either case the abscess is at first confined to and enclosed laterally within the area of the soldered membranes. Should the abscess enlarge considerably, and the disintegrating process affect the adherent membranes now forming the abscess wall, it is possible that the disintegrating inflammation may spread laterally into the subdural space, or the abscess may burst into it, thereby setting up an acute lepto-meningitis.

“(4) If the cause of the inflammation penetrates through the outer layer of the duramater into the wide-meshed capillary network of its inner layer before soldering of the membranes has occurred, the whole subdural space is open to invasion, and an acute, far-reaching lepto-meningitis is apt to ensue.

“(5) Lepto-meningitis and cerebral abscess may form independently of a visible tract of inflammation spreading inwards from the initial focus of irritation outside the cranial cavity. In such cases, the pathogenic cause has been conveyed through the vascular system by direct extension from the source of infection to the meninges or brain. This may be done by a thrombosis extending through the veins into the pia or the brain; or the veins may become blocked by a localized disintegrating thrombus, por-

tions of which, containing pathogenic microorganisms, may be carried inwards by the reversed blood stream. The sinuses and intracranial and intraosseous veins are destitute of valves, and the current of blood in them can be reversed on occlusion occurring at one point. This has been termed a reflex method of propagation. It is clear that when the thrombus passes into and occludes the sinuses, it may rapidly extend into the cerebral or cerebellar veins, and thus convey those organisms into the cerebrum or cerebellum respectively. The veins running into the sigmoid sinus are very numerous, both from the mastoid cells and antrum on the one hand, and from the contiguous parts of the cerebellum on the other. Many of the veins from the temporo-sphenoidal lobe run into the superior petrosal sinus, which also receives numerous veins from the tympanic cavity, and from the neighboring tegmen tympani. Besides the venous channels, infective matter may be conveyed into the brain substance through the perivascular sheaths of the arteries. It is also possible that some of the cortical branches of the second division of the posterior cerebral artery may become involved, as they lie on the pia mater, covering the base of the middle fossa; pathogenic organisms being conveyed to their immediate vicinity by the minute veins already referred to, or by direct contact with the softened and disintegrating dura and arachnoid over the tegmen tympani. Plastic exudation emanating from an erosion in the tegmen, and accompanying infective processes, is often distinctly prominent in this region. The perivascular sheath of the artery may become affected, and be the channel through which the peccant matter reaches the brain.

"If it should involve the arterial contents, a localized thrombus may result, of which, if it disintegrates, a portion may be carried from the larger vessel into the terminal capillaries in the white cerebral substance, where it would set up minute infective hemorrhagic extravasations, round which an abscess might form. In such a case, the abscess of the brain would be formed in the white substance, without the surface of the convolutions showing marked inflammation.

"It is also possible that a large arterial trunk may become involved, such as the internal carotid, and partial infective thrombosis of that vessel might lead to infective particles being carried in the arterial circulation to distant parts of the brain, so that abscess

Of the writers consulted, few have anything to say on the variety of macular degeneration here presented. All but Oatman dismiss the subject with a few paragraphs on "Amaurotic Family Idiocy." In the work on "Diagnostics of the Fundus Oculi," by the late Dr. Edward L. Oatman, of New York, the matter is discussed in full. Oatman speaks of two distinct types. The first is amaurotic family idiocy, in which the disease appears in infancy and is associated with marked muscular enfeeblement and cerebral degeneration. Patients in this group become totally blind as well as imbecile and usually do not survive more than two years, only one reported case living to be five.

The second type Oatman divides into two varieties. In the first the disease makes its appearance at about the sixth year, coincident with second dentition, at which time there is a simultaneous failure of vision in both eyes, together with signs of mental degeneration. "In developed cases the ophthalmoscopic picture consists of atrophy and pigmentation of the retina in the macular region, bleaching of the optic nerve, and narrowing of the retinal vessels. * * * The functional eye-disturbance consists of central scotoma for red and green, failure of central vision, and sometimes day blindness."* This form he calls maculocerebral degeneration.

The second variety of this division Oatman calls the macular type. This occurs about the age of puberty and is not associated with mental degeneracy.

Amaurotic family idiocy has been found only among Hebrews. Maculocerebral degeneration, on the other hand, is never found among Hebrews, but only in other races. It usually occurs in more than one member of the same family.

Two cases of bilateral macular degeneration in adults of the same family were reported by Dr. Burton Chance, of Philadelphia, in the *American Journal of Ophthalmology* for April, 1920, the pictures of which, taken from that journal, are herewith presented.** In these cases the loss of vision is reported to have occurred between the tenth and twelfth years in otherwise healthy individuals. As will be seen by the plates, they present much more pigmentation outside of the macular region and less inside the circle than in my

*Oatman. *Diagnostics of the Fundus Oculi*.

**The plates were passed around for inspection by those present at the session.



M.T. Meagher - ©-1921.
N.Y.C.

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case. The differences between Oatman's plates and the picture of the case presented by me are quite striking. In all probability this case belongs to the second division of maculo-cerebral degeneration as described by Oatman, in spite of the differences of the pathological picture.

In conclusion I wish to express my appreciation of the kindness of the artist, Miss M. T. Meagher, of New York, whose very effective delineation has made possible this permanent record of a rare condition.

DISCUSSION

RALPH I. LLOYD, Brooklyn, N. Y.: Cases of this type are exceedingly rare, although the ophthalmologist runs across something like this once in a while, of course. Cases of undoubted maculo-cerebral degeneration of the second type (coming around puberty or later) are rare.

It has been my privilege to see one case, of which there can be no question, because there is another member of the family affected with macular changes, and other trophic phenomena are present.

I might speak for a moment of the effect on the field of vision. I had the privilege of seeing one of these cases, and got the fields. Peripheral fields have been taken before, but the study of the central scotoma in these cases has not been so carefully done; at least, I have seen none. The change in the peripheral field is not great in proportion to the loss of vision. My case ran about 20° smaller than normal all around. The vision in one eye is down to 20/70 with correction—the left eye.

The blind spot is enlarged and the zone of doubt very much enlarged. There is a central scotoma of about 7° or 8° with a wide zone of doubt at the fixing point of the left eye. In the right eye there is a ring scotoma which came to about 1° of the fixing point, and at the time I saw the patient last, on looking into the eye, there is a zone of atrophy about the disc, which gives the impression of being in two stages, as if the retina and choroid were in three layers and one layer missing near the disk; and outside of that two layers missing. The zone around the macula is not so eroded as the zone close to the disk. The appearance of the

macular area is like that picture of Oatman's of a similar case, with the brown dots.

The patient is a female; the hair on the top of the head has never grown much. The hair under the arms is below normal. The mentality is not affected. There is a younger brother who has a macular change in one eye. The other eye has been injured, so it must be considered out of this question. We have the trophic as well as the macular changes in these two cases.

The number of cases of maculo-cerebral degeneration seen and field examined is few, but the number of cases of pigmentary degeneration of the retina is sufficient. The field changes in the two diseases are opposed in their traits. Night blindness, and a steadily contracting field, with central scotoma rare, is what is found in the better known pigmentary degeneration.

Based on too few cases for absolute conclusions, we would say the maculo-cerebral degeneration has a less pronounced contraction of the field, but central scotoma is early and failure of vision early. Night blindness not prominent.

I have a small boy now in my clinic, who has apparently the beginning stage of this condition. I am trying to get the various members of the family to the clinic. I have had two brothers there who are all right. Their vision is normal, and nothing is to be seen in the eye. The boy's eye is showing the non-inflammatory type of change, just like Dr. McDowell's case.

The characteristic feature of all these conditions is that the change is not inflammatory. There are no atrophic white spots. There are some types of pigmentary degeneration that make you think they belong in this class. Not long ago a young Hebrew was sent to my office who was prosecuting a claim for loss of eyesight from injury. He had pigmentary degeneration.

With the contraction of the peripheral field comes the poor vision in the dark. We should also bear in mind some of the peculiar congenital malformations and cases of bilateral symmetrical changes in the macula, which seem not to have any suggestion of trophic change. These cases have a congenital limitation of life; by that, I mean a type of case which seems to me to represent a nervous system which comes into the world with a decided limitation of its life and its function. These cases live a certain length of time, and then the strain of existence begins to

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tell and we have this degeneration without any inflammatory process. We see another type of changes in the macula and retina: non-inflammatory in character, but nothing present in the nature of trophic or mental changes to nail it down or put it definitely in this class or another.

GEORGE W. MACKENZIE, Philadelphia: I would like to ask Dr. McDowell or Dr. Lloyd whether they had thought of endocrine therapy in these cases? It would seem that endocrine therapy should be eminently indicated in these conditions.

DR. MCDOWELL: Endocrine therapy would have to be applied at an earlier stage than that in which this patient appeared, in order to do any good. I do not believe that any medication would have done any good at the time I saw it. In these cases, if seen early enough, it seems that the process might be arrested; that is, if you can find the proper medication. If we can put our finger on the focal point from which the trouble starts there is some chance. It seems to be in some cases the ganglion cells of the brain. Whether it is in this other type I do not know. These cases seen by Chance, and some others reported by Oatman, were examined for syphilis and tuberculosis, and found negative.

GEORGE A. SUFFA, Boston, Mass.: How long were these cases in progressing?

DR. MCDOWELL: The cases that Dr. Chance reported were twenty-five years and twenty-seven years of age. According to the statement of the patient, they had begun at ten or twelve years of age.

CATARACT FROM ELECTRIC ACCIDENT.—J. Strebel, *Schweizer. Med. Woch. Basel*, July 28, 1921; *Abstr. Jour. A. M. A.*, Sept. 24, 1921. The author applies to cataract in general what has been learned from cataract following accidents. His advice is to extract an electric cataract as soon as possible, as this will give a usable eye when the cataract starts in the other eye. In one of his cases the electric cataract developed in both eyes in three weeks; in another case the interval was six months in one eye and two years in the other.

H. L. G., JR.

SOME EXPERIENCES IN THE TREATMENT OF CHRONIC OTITIS MEDIA WITH THE RICE OTO-CONCUSSOR*

D. A. MacLACHLAN, M.D.,

Detroit, Mich.

IT may not be superfluous to recall our successes and failures in attempting to relieve or cure this class of cases, and in doing so I doubt not we will find the failures far out-number the successes. Personally I know of few disorders of the special senses that present more difficulties in diagnosis, prognosis, and treatment than does the one under discussion.

During the thirty-odd years that I have specialized in eye, ear, nose and throat diseases, I have used about every method and appliance advocated by text-books, journals and clinicians, and like most others with whom I have compared notes, have felt obliged to say to such patients, "I will be glad to undertake the treatment of your case but can give little assurance as to the time required or the degree of relief likely to be secured." I have been surprised and pleased at the ready response to treatment in some cases, and disappointed at the tardy or utter lack of improvement in others that seemed no less promising than the former. In all cases I have based my judgment on the patient's personal and family history and characteristics; upon the apparent or probable cause of the condition, and complications removable or otherwise by operation or treatment; upon the probable efficiency of remedies and electrical and mechanical measures that I had used over and over again in thousands of cases with good, bad and indifferent results; but all the same my experience has latterly emphasized to me, at least, the uncertainty and difficulty in the handling of such cases, even in private practice, with the best available facilities and most dependable class of patients.

Among other means of treatment I have used about all the electrical and mechanical devices in vogue when I began special practice, and those that have since been invented and advocated, in-

*Read at the Annual Meeting of the O., O. & L. Society, Washington, D. C., June, 1921.

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cluding vibratory massage, musical tones, pneumo-massage, etc., with more or less benefit, I am convinced, in a goodly number of cases. In the light of more recent experience I believe I have erred in not making such treatments more frequently, in many cases at least. Unwillingness or inability to take more frequent treatments made it impossible in many cases, and my own hope or expectation of getting good results with every-other-day or weekly visits, to save patients trouble and expense, led me to adopt it, with partial or complete loss of benefit to the patient and more or less loss of reputation to myself.

During the past few months I have been privileged to make use of the new instrument introduced by Dr. Rice to this Society at its meeting in Cleveland one year ago. As I recall that occasion, I, with everyone present except the inventor, was "from Missouri," but according to my habit of being ready to experiment with any method or thing that promised reasonable hope of relieving or curing these intractable cases, I then ordered a machine, and a few months later it was received and installed for use.

Unfortunately I had a special and personal reason for welcoming something of the sort that might hold out promise of succeeding where other means had failed. While a student I developed a vicious and persistent case of old-fashioned fever and ague, that shook me up in proverbial style every spring and summer for several years, and which I could only shake off at intervals, so as to permit of looking after my patients, by taking large doses of quinine, which made music in my ears and "spleen and gall" in my system generally. The music in one ear persisted after "the evil spirit had departed," but no sign of impaired hearing was noticeable until ten years ago. About that time an attack of grippe affected my ears markedly, but the hearing was apparently restored in a few weeks, and continued normal for the watch two or three years after. Since then occasional colds and attacks of the grippe have gradually increased the deafness, until about three years ago it was plus contact only in the left, and a few inches in the right. Some treatments by my friend, Dr. Fred L. Johnson, at that time, of thuja oil vapor through the eustachian catheter, together with Strych. phos. internally, improved me very much, so that hearing ordinary conversation was not at all difficult. Dr. Johnson was "overseas" in 1918, and in his absence press of work

and other things leading me to relax vigilance, the ears lost again until they were as bad as before or worse. They continued to fail in spite of treatment, so that by 1920 ordinary public speaking or conversation could only rarely be understood; hearing for the watch was: L. — contact, and R. + contact; the tuning fork with slight variations has always been normal on the mastoid, and at the meatus from 15/70 to 30/70 in the L., and R. 30/70 to 50/70, varying according to condition of weather, in dispositions of one sort or another, etc. The eustachian tubes have always been patulous to forced inflation, but often more or less obstructed, the deafness being worse, of course, at such times. There was more or less retraction of the drum, not commensurate, however, with the deafness, compared with patients having about the same hearing as myself for the various tests. I seem to have lost function more than usual, perception being less than the average in others. The ability to hear sounds, which are often confusing or distressing, seems out of proportion to my inability to distinguish articulation of speech. This, with the long-existent ringing tinnitus in the L. ear, and later occasionally in the R., may have been auditory nerve-disturbance due to the quinine taken years ago, but not perceptible while the middle-ear was unaffected.

The first Oto-Concussor received was so imperfect as to make it impractical to try to treat patients with it; hence its use, first by Dr. Johnson, and later by myself when I had acquired the knack of self-introduction of the catheter, was limited to my own case, and that so irregular and unsatisfactory as not to be either a fair demonstration or test of the appliance. Notwithstanding this the improvement was very marked, especially when I could use it somewhat regularly every day. At first I could appreciate the vibrations only while increasing pressure by blowing, as in Valsalva inflation; but as hearing improved, and the sense of fullness in the ears lessened, the vibrations were quite perceptible without effort. The tinnitus in the R. disappeared, except at rare intervals, and tones of music and conversation became nearly normal.

Later, April, an improved machine arrived to replace the first, and I then began to treat several patients, all far advanced and offering little if any improvement under other treatments. The time is too short in these cases to determine the status of the machine in relation to them, and I can only give you a statement of

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matters thus far without attempting to determine the suitable cases for treatment.

CASE 1.—Mrs. M., began treatment April 4, 1921.

H. P.-W., R. 6/72, L. 18/72.

T. F.—Mastoid, R. 35/40, L. 35/40.

Meatus, R. 25/70, L. 40/70.

Voice—Difficult. Tinnitus in L. M. T. both retracted, R. worse, both anaemic; slight naso-phar. catarrh. Very nervous; pains and numbness in limbs. Duration, several years.

Treatment—Daily for one week then three times weekly to date.

Examination—June 17th, 1921.

H. P.-W., R. 24/72, L. 50/72.

T. F.—Mastoid, R. 35/40, L. 35/40.

Meatus—R. 30/70, L. 40/70.

M. T.—Retrac. less, light reflex and color normal.

Voice—Little difficulty; hears clock at home not heard for years. Patient made most rapid gain for the watch during the last week, having daily treatment, while Rinné test showed little change. The watch test was made carefully and repeatedly, with the eyes closed.

CASE 2.—Mr. K., age 27, sales engineer.

Duration, several years; drum retraction; tinnitus in both.

H. P.-W.,—1/72 both ears.

T. F.—Mastoid normal.

Meatus—R. 25/70, L. 30/70.

Began treatment May 9, 1921.

June 10th, H. P.-W., R. 15/72, L. 30/72.

Hears much better; tinnitus only at times.

Several others have been much improved, and two others hardly at all. I had hoped to present some conclusions as to results, at least, but as already explained, inability to use this first machine prevented. My judgment is, however, that it will prove beneficial in certain cases, at least, that do not respond favorably to other measures. It has been a boon to myself, and I am hopeful of further improvement from its continued use. My own final test, June 18, 1921, is as follows:

R. 20/72, 30/40, 60/70.

L. 5/72, 28/40, 45/70.

DISCUSSION

PHILIP RICE, San Francisco, Cal.: I have for some time cherished the hope that the time would soon come when I might sit back and listen while someone else talked about the Oto-Concussor.

I am certainly grateful to Dr. MacLachlan for bringing this subject before this meeting, and glad to hear his good report. To hear him say that he himself has been greatly helped by the use of the Oto-Concussor in a large measure compensates me for great strain on my mind and soul and purse. Had anyone told me three years ago what a task it would be to perfect the apparatus and have it properly launched by the surgical instrument houses I should never have undertaken it. However, I repeat, to know that I have in some degree been able to add to Dr. MacLachlan's happiness in a large measure compensates me.

Our president asks me to explain the *rationale* of the treatment: How do we get results? In what class of cases more particularly? What really takes place?

It is my opinion that only one thing is achieved by the treatment, namely, the creation of an active hyperemia. This object was all I sought to attain as I worked along to perfect the instrument. I was convinced that if this could be accomplished we should surely see an improvement in the function. An increase in the vigor and suppleness of the hearing apparatus must surely be followed by increased hearing. As the years have gone by and I have gained experience and observed cases I am more and more convinced that we get good results in no other way. Of course, in addition to hyperemia we also exercise the ossicular chain in a splendid way.

A question that is frequently asked is, "What can be accomplished with an otosclerosis?" I never expect to do anything for a true otosclerosis. Why? Because of the more or less complete obliteration of the nutrient vessels, and hence, the inability to create an active hyperemia. The same is true in advanced cases of so-called catarrhal deafness. In these there is very much the same pathologic state. I have come to think that it is not so much a question of kind of morbid process as it is the stage to which the process has advanced. One thing I can say with absolute con-

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viction is that with the use of the Oto-Concussor one need never fail in opening an obstructed eustachian tube. In ten years I have not failed once. I recently had a splendid demonstration of what can be done in such a case. The patient, a woman of sixty-two, had an acute otitis media in the right ear when twenty-two, leaving her practically totally deaf, hearing for the conversational voice being only twelve inches. Though she had had treatment both in this country and Europe over a period of a number of years, no one ever succeeded in opening the tube. At the end of ten weeks' treatment we had the tube opened and conversation hearing up to thirty feet.

WILLIAM H. PHILLIPS, Cleveland, O.: I should like to know if Dr. Rice is perfectly satisfied with the mechanical status of the instrument?

DR. RICE: Not absolutely. It is too noisy. But this I believe we shall soon be able to overcome, or at least greatly modify. The works are in the upper part of the instrument, as you see, and the cover which slips down over this section is too light. I have taken the matter up with the manufacturer and he is now experimenting with various materials in an endeavor to find something that will more perfectly muffle the sound. Much of the noise, however, can be overcome in the adjustment of the instrument. Unless it is in perfect tune with the current it will produce a harsh and irregular sound. As currents vary a great deal it is necessary at times to change the adjustment. The voltage drops as low as 104 or goes as high as 125 in the course of the day. By turning the knob marked B in the instructions, one can increase or decrease the amount of current. Furthermore, the spring can be raised or lowered between the blocks at its base, also increased or decreased in its length by moving the blocks forward or backward. A little study will enable one easily to adjust the instrument to any current, and once it is adjusted it requires little or no further attention.

ELLA G. HUNT, Cincinnati, O.: Will it work on both the direct and alternating currents?

DR. RICE: Yes; often doing so without any change in the adjustment. Never more than a slight change is required to get a perfect effect.

NEIL BENTLEY, Detroit, Mich.: I, personally, greatly appreciate Dr. Rice's sense of honor and his effort to give us a perfect

machine. I could not succeed in using the first machine; it was too complicated. The second, which was sent with no additional charge—which I think was not only courteous but showed a great sense of honor—worked like a charm.

They say that you should take the plunger off and clean it; but it has worked so well that I have been afraid to touch it. It is very efficient in cutting down tinnitus. As Dr. Rice says, it does not affect otosclerosis. I was glad to hear him make that statement. I have tried it out in some cases but not sufficiently long to make a report.

WILLIAM H. PHILLIPS, Cleveland, O.: I used the pressure machines last year, and found the first one exceedingly defective. It was an alternating current machine, and my current is direct. I had to use my X-ray machine, which gives a much higher voltage than that to which the machine was adapted.

This second machine is satisfactory, except for the fact that it is very noisy. It is not pleasant to use it four or five times in succession in a small room. If Dr. Rice can overcome this defect, it will be a big improvement. I overcame it to some extent by asking Mrs. Phillips to make me a cotton cover after the fashion of an English tea cozy, which I placed over it, thereby considerably reducing the noise.

I think I should be inclined to differ a little with Dr. Rice in the statement that it has no effect on otosclerosis. Several cases in which I have used it have been ones in which the diagnosis of early otosclerosis was made, and I feel that they have been benefited. Not only do they complain less of tinnitus, but their hearing has been improved in several instances. These were cases in which the otosclerosis had not progressed too far. I really feel that in this instrument Dr. Rice has something that may be exceedingly valuable. If we find out its limitations and use it intelligently, I believe that we shall find it an addition to our armamentarium in the treatment of ear diseases, especially that type for which we have been able to do comparatively little in the past.

GEORGE B. RICE, Boston, Mass.: My experience has been similar to that of Dr. MacLachlan and Dr. Phillips. In the fall of 1920 I experimented with the machine for some weeks, but as it was not adapted to our direct current my results were disappointing. This spring I was furnished with a new machine which was

reliable, and I have been using it with much greater satisfaction. I do not believe, however, that I am ready to make a report. I think that in justice to Dr. Philip Rice and ourselves a report should be based upon an exhaustive preliminary examination of a large number of cases, followed by repeated examinations during the course of the treatment, before a final estimate of the value of the instrument can be given.

It is only fair to say that some of my cases have improved in a remarkable manner.

DR. MACLACHLAN: It is an old saying that "One swallow does not make a summer," and that applies especially to the matter in hand. My case is peculiar. I have not been able to determine it myself. For several years I have consulted prominent men; and in most cases I have felt after the examination that they regarded it as something not worth undertaking—probably on the basis of senility. There may be something in that; but if any of you will accompany me in a thirty-six hole golf game, he may be convinced that it is not entirely senility. I have a family tendency to rheumatism which I inherit from my good Scotch ancestors who lived on the west coast of Scotland, exposed for centuries to the damp winds there. That, I think, has had an effect; but after growing worse for years and reaching the conclusion that I should have to go about with an ear-trumpet and be shut off from sounds for the rest of my life, you cannot conceive what relief I have experienced from this treatment. It seems that to me, at least, possibly one swallow does make a summer; and I do not believe that the members of this Society can neglect a thorough test of the instrument. It seems to have an absolutely different effect from the ordinary aural massage instruments. I have followed all these various things with interest, and experimented with most of them, but this seems to have an entirely different effect. In two or three cases it has cleared up quickly the tinnitus and the retraction of the ear-drum. The patient's nervous system has apparently changed. I have used remedies more or less in connection with it, as I have done with all other methods, but this immediately gave different results, and I think that we have, as has been said, the promise of something satisfying in this instrument if we study its limitations and apply it to the proper cases. Anything that will relieve these

profound and stubborn ear conditions, I think, should be worth a trial.

DR. BENTLEY: Two of these machines are in the corner and the gentlemen have demonstrated them with great benefit to us. I know that they will do it for any of you who may care to have them do so later.

THE VALUE OF DRUGS IN OPHTHALMOLOGY.—In this article the usefulness of the various drugs used in eye-work is discussed by the author, who concludes that: "In our justifiable enthusiasm over the great achievements of Pasteur and Lister, we have had rather too much tendency to consider the one great factor in infection to be the invading bacilli and their toxins, the while overlooking the equally great factor of bodily and tissue resistance. Fortunately, the serious study of food products of late is tending to the correction of this error. This research work is not only of large value in the various so-called nutritive disturbances of the eye, but of great assistance in cases of bacterial infections as well. 'One man's meat is another man's poison' is well exemplified in the study of food sensitization in certain obscure ocular manifestations. Preventive medicine is making vast strides. But in ocular affections we shall have to rely, for many years, on the so-called curative measures—not the least of which are drugs."—W. H. Wilmer, *Jour. A. M. A.*, October 15, 1921. W. G. S., JR.

HAY-FEVER*

W. H. WILLIAMS, M.D.,

Middletown, Ohio.

UPON the urgent request of the Chairman to read a paper before this meeting I decided to present a preliminary report of a series of hay-fever cases which seem to have responded to treatment more favorably than the average.

The symptoms of this condition need no description; they are familiar to all. It has been pointed out by many that the subjects of this trouble were of a nervous temperament; also that they seem to be subject to disease in general, particularly the diseases of childhood.

Other writers have said that it was due to a lack of function of the ductless glands in breaking down the waste products, while another likens it to an angioneurotic oedema.

Whatever the cause, there seems to be a neurosis in which there is a hyperaesthesia of the nasal mucous membrane to certain odors, pollens, etc., which may be different for different individuals.

My attention was first called to this method of treatment by an editorial in *The Journal of the American Institute of Homæopathy*, by our president, Dr. G. W. Mackenzie, calling attention to the Duncan method of obtaining a discharge from the afflicted area, whatever the disease may be, mixing it with sterile water, filtering it through a germ-proof filter, and then injecting it back into the same patient either in full strength, or better, diluted.

The particular technique used was to place a pledget of absorbent cotton in each nostril, for about five minutes, allowing it to become saturated with the discharges. Then the pledgets were put in some sterile water in a test tube and allowed to stand from six to twenty-four hours. This solution, which is supposed to contain the toxin-complex, as Duncan calls it, is filtered through a Berkfeld filter. About .5 c.c. of a 2x dilution of the filtrate is injected hypodermically into the patient as the initial dose. The

*Read at the Annual Meeting of the O., O. & L. Society, Washington, D. C., June, 1921.

dose was increased to .75 c.c. and then 1 c.c., or even more, with a dose about every other day—the size of the dose and the frequency being regulated by the progress of the case.

Twelve cases were treated last summer. Of these, four were confirmed cases of several years' standing, while the others were not more than two years old. Of the four chronic cases three reported material relief from the treatment, but I sometimes found it necessary to give doses which would produce a slight reaction before they experienced relief.

The other more recent cases responded more quickly to treatment, the dose required not being so large nor repeated so often.

Of these, seven reported good results; the other one took only one dose and stopped because she did not get any relief.

One of these cases was relieved in three hours from her initial dose, and some others before the second one was given.

After frost the writer medicated some pellets with the same solution and asked the patients to continue these by mouth for about a month.

As to the permanent results of this treatment I cannot say at this time. Upon discharge patients were asked to return about a month before the season commenced that they might receive either by mouth or hypo some of their particular filtrate, which is being saved for them, hoping by so doing either to modify or prevent the return of the attack when the season commences.

As before stated, this is a preliminary report. Having finished the season's work I saw many deficiencies in it. I treated the patients for the one condition when perhaps it might have been better to treat each one as a whole. That I should like to do this coming season.

DISCUSSION

GEORGE B. RICE, Boston: We must go more deeply into the matter than just the simple treatment of infection. We always have an underlying neurosis, and this is generally acknowledged. We have also the peculiar idiosyncrasy of the patient, the external irritating cause, and lastly, an infection. For purposes of study these cases are divided into chronic and periodic. We find that in the chronic cases there are a large variety of external irritants; different kinds of dust, varied odors, changed atmospheric con-

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ditions, and varying constitutional states of the patient, as shown by proteid tests, and also the local pathological deviation from the normal. As I have said I believe that in every case there is, after a time, an added underlying infection. So we must treat all these conditions if we expect to produce results. In the periodic cases the same underlying neurosis exists, but the external irritants are more definite, and are usually in the form of pollens.

As for vaccines I may say that I have tried various methods of giving this form of treatment; autogenous vaccines, the use of commercial vaccines, and Duncan's method. I have tried these in a large number of cases, over long periods, and have come to the conclusion that if the commercial vaccines are adapted to the condition of the patient, they produce more valuable results than do the autogenous vaccines or the treatment of Duncan.

NEIL BENTLEY, Detroit: What vaccines do you employ?

DR. RICE: I make an examination of the secretions, and use a commercial combination which corresponds most nearly to the secretions under examination.

W. G. SHEMELEY, JR., Philadelphia: On looking up the literature, I was amazed to find that a great deal had been written on hay-fever, and that apparently everyone disagreed with everyone else. There did not seem to be any concrete idea of just exactly what the condition was. Some considered it a pure neurosis; some considered it an infection; some considered it due to a specific pollen; and some thought that it was caused by a vast number of pollens. The latter seems to be the most generally accepted view now, plus the neurosis.

It seems reasonable that in therapy if you have the exact toxin which produces a state of anaphylaxis in your patient to that particular disease, it will have an advantage over the stock products. The majority of stock products made in the laboratory become practically valueless after a few months. The manufacturers themselves admit this. Most of them are experimenting and trying to produce something which will last indefinitely.

I have found that the number of irritants that were supposed to produce this condition that we call hay-fever, which is more or less of a misnomer, is very great. There were more than one hundred and fifty different ones. The manufacturers say that it is easy to find out the pollen that the patient needs by making a test

and getting a reaction. If you get fifty pollens, you have a pretty difficult proposition to pick out the pollen or pollens that produce the reaction.

My experience with auto-therapy is the same as that of Dr. Williams: that we get better results than from the stock vaccines, but it has one disadvantage. We have no way of using it for prophylaxis. The history is that the patients who have been once treated tend, the next season, to have a very slight attack, and some escape altogether.

HARRY S. WEAVER, Philadelphia: There is just one remedy that I want to call attention to, which probably some of you have not used in the treatment of these hay-fever cases. That is *aralia*. It has practically all the symptoms that you would find under *alium cepa* or *arsenicum*, but it has one symptom that, when you find it, you can prescribe it with the utmost confidence. That is, the salty taste to the discharges. When you find that one symptom combined with the symptoms that will call for *arsenicum* or *alium cepa*, or any of the other remedies that you might think of in the treatment of hay-fever, you can prescribe *aralia*, the second decimal, and the patient will be relieved.

DR. WILLIAMS, closing: Dr. Rice has brought out the points that I intended to emphasize, although I said very little. We must get at the underlying dyscrasia. That is why I classified this as a preliminary report; because I was not satisfied with the work I did last year.

THE PLASTIC REPAIR OF THE EYELIDS BY PEDUNCULATED SKIN GRAFTS.—George H. Gross, *Jour. A. M. A.*, October 15, 1921, states that grafts used in repair of the eyelids may be divided into three classes: 1. Pedunculated, autogenous grafts. 2. Free dermic, or Wolff grafts. 3. Epidermal or Thiersch grafts. Before undertaking the actual plastic work several important points must be remembered: 1. Sufficient time should have elapsed following the injury in order that all shrinkage and contracting of scar should have ceased. 2. In all cases involving the lacrimal area, the removal of the lacrimal sac should be the first step undertaken, since this greatly reduces the possibility of having the graft destroyed by infection which so often lies dormant in the lacrimal sac or canal.

W. G. S., JR.

UNDER-GRADUATE TEACHING OF OTOTOLOGY*

GILBERT J. PALEN, M.D.,

Philadelphia, Pa.

THE object of this paper is to promote discussion looking to the betterment of our methods of teaching otology. In the course of the paper it is our intention to bring out the methods as adopted in the Hahnemann Medical College of Philadelphia in order to create friendly criticism, if such is needed.

We have been teaching this subject for many years, and during that time we have put forth our best endeavors, in the time allotted to us for this purpose, to give to the under-graduate student as thorough a knowledge as possible of the diseased conditions which the general practitioner comes in contact with. Despite the fact that we have conscientiously striven to give the student a fair working knowledge of otology, we have frequently been exceedingly discouraged when we have met some of these men in later years in consultation and found how little they had carried away with them from our teaching. This was evidenced by the questions they asked concerning the cases we had been called to see in consultation. Such instances have brought forcibly to us the fact that something was wrong somewhere, either with the student or with the methods of teaching.

In the earlier teaching of the subject we probably made the mistake of attempting to go too fully into details, thereby fogging the student's mind with much that would be of little value from a practical standpoint. From year to year we have carefully followed, as far as possible, the results of our teaching, coming to realize that it was possible in the limited time that was allotted to our subject to give the student little more than a fair understanding, of the more common otological conditions and their treatment, and only such conditions as it is logical to suppose the general physician could be expected to understand sufficiently to treat.

The question of what we should give the student and what

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should be eliminated from our course has been the subject of frequent discussion between my associate and myself, and from year to year we have altered our methods after checking up the results of each year's teaching as gained from oral and written examinations and direct contact with the student.

We have at all times laid great stress upon a good knowledge of the practical anatomy, physiology and pathology, feeling that if the student had a fair knowledge of these subjects, he could, by deduction, very frequently reason out for himself the occurrence of conditions and symptoms. We have tried to prevent the student from learning his subject in a parrot-like fashion, attempting rather to give him sufficient basic knowledge to furnish material from which, through his reasoning, he might gain and retain the knowledge which we wished him to have. In our earlier teaching the only instruction which the student received on the anatomy and physiology of the ear was given him during his general course in anatomy of the freshman year, and the time given to this instruction was necessarily exceedingly short. This anatomical knowledge was soon forgotten and by the time he reached his senior year and came to us for instruction in otology, we found that we had nothing to work on. We were talking to men who had not the slightest idea of the anatomical structures which it was necessary for us to speak of in our teaching. Subsequently, through our suggestion, special courses were given in the sophomore class upon anatomy of the eye, ear, nose and throat. The students' examinations were held in the sophomore year upon the subjects given him. We found that when these students reached their senior year, while there was some improvement, not sufficient had been retained for our teaching purposes, so that we were forced to utilize much valuable time in reviewing this subject, thereby depriving the student of many valuable hours of clinical teaching.

We then impressed upon these sophomore students the necessity for retaining this knowledge in order to have a good understanding of the practical work which they were supposed to get in the senior year; informing them that we should expect them to refresh their memory before attempting their practical work in the senior year, and holding them accountable for this. Unfortunately we could not absolutely hold the student accountable for this, as it was not required by the college curriculum; still, we found that

UNDER-GRADUATE TEACHING OF OTOLOGY

the better class of students—those who were earnestly attempting to gain a knowledge of medicine—came to us in the senior year, retaining much of what we had taught them in the sophomore year. At present our teaching is spread over three years, beginning with the sophomore and ending with the senior year.

In the sophomore year we give a series of lectures upon anatomy and physiology. In these lectures, while we give the student a good general knowledge of anatomy and physiology, we lay a special stress upon those portions of the anatomy which are of practical importance, such as the course and length of the external auditory canal; the position of the ear-drum; the landmarks of the ear-drum; the course and structure of the eustachian tube, together with its functions; the middle-ear cavity and its highly important intracranial relations, as well as the mastoid antrum and its relations; the course of the facial nerve; and the auditory nerve, its acoustic and static functions. In the first hour of this course we give the student a general outline of the ear—such as you will find in the pamphlets which we will pass around. We then take up the individual portions of the ear briefly, giving the practical anatomical points. The students are then shown a series of lantern slides picked from various anatomies and textbooks; in a subsequent hour we show them lantern slides of original dissections, and later the actual specimens are shown. The course of lectures ends with a quiz in which we attempt to check up how much the student has learned, at the same time filling in where we find that the student has not grasped what we have attempted to give him.

In the junior year a course of ten lectures is given upon the ear. The student is impressed with the importance of a full and systematic examination of the case, and advised to take careful histories and keep careful records of all cases. We then take up the subjective examination of the case, pointing out the value of a thorough study of the subjective symptoms; this we lay a great deal of stress upon, feeling that the general physician, on account of his lack of knowledge of objective methods should have a thorough understanding of the subjective symptoms and their value from a diagnostic and prognostic standpoint. We then take up the functional examinations of the ear, giving the student the usual quantitative and qualitative tests for the function as well as the tests for the static function. The student is then given the various

methods of examination and instruments used in examination. These are touched upon only briefly in the junior year as they are covered in the practical course in the senior year. The objective examination of the case is likewise given briefly, as this also is a subject for the senior year. The remaining hours of the course are given to the otological diseases, especially to those conditions which are commonly met with by the general physician.

In the senior year the students come to us in small subsections so that we are enabled to give them close individual attention. Each subsection is given ten hours' teaching, and here we have attempted to systematize our teaching so that a different subject is taken up at each subclinic, it being our wish to cover the subject thoroughly and in a systematic manner. Our assistants are required to send us each day the class of cases which are required for that day's teaching, and our entire otological staff is present at these subclinics to aid in teaching.

In earlier years it was our custom to have five operative clinics, the other five hours being spent in the dispensary. We now, however, confine our operative work to one clinic, feeling that a practical knowledge of the more common otological conditions is of far greater importance to the student than the major operative work. Of course, the minor operative work, such as incision of the ear-drum and removal of aural polypi, is performed during the course of our subclinics, but we feel it is wasting much valuable time to perform mastoid operations for the under-graduate student. During the course of these subclinics we study our students individually and attempt to bring up to standard those students who are slow in comprehension.

Before each subsection presents itself each member of the section receives a letter in which we endeavor to gain the co-operation of the student in our work; impressing upon him the fact that we are doing our part and asking him to do his by studying up his sophomore and junior lectures, and to study carefully before each subclinic the subject to be presented that day. We have been greatly encouraged this year by finding the students giving us greater co-operation than ever before—evidenced by the fact that they present themselves at each subclinic having read up upon the subject for that day and by their interest during the entire course.

UNDER-GRADUATE TEACHING OF OTOLOGY

The following letter is sent to each student before he starts subclinic work in senior year :

LETTER

The arrangement of the work in the otological subclinics has been carefully outlined with the intention of giving you, in a very short time, a working knowledge of the otological examination and treatment of the more common diseases of the ear.

We consider the dispensary work of greater value than the operative work, and have arranged the work accordingly.

Your earnest co-operation is essential in order to successfully pursue this plan. We, therefore, urge you to familiarize yourself, before each subclinic, with the subject outlined. This you can do by reviewing the anatomy of the ear as given you in the sophomore year, by referring to your notes of the junior year, and by reference to the college library.

Your standing in the subject will be determined by your punctuality, the interest you evidence, your efforts in the work and by the examination at the end of the course.

The course as outlined will be followed as closely as possible.

Very truly yours,

Realizing the importance of good teachers, and that many cannot impart their knowledge to students, we have required that our assistants be present at each subclinic so that they may become conversant with the methods of teaching; and also we require, from time to time, that the subclinic shall be carried on entirely by them. It has been exceedingly gratifying to note how these men develop under this system, and we feel that any of our men are capable, in the absence of their chiefs, to take hold of the teaching in a thorough and satisfactory manner.

Naturally, one of the greatest drawbacks in teaching has been the attitude of the student himself, who is prone to look upon the subject of otology as a side subject of no importance; who will devote his time to the major subjects of medicine and slur over the minor subjects, feeling they are of lesser importance. We have endeavored to overcome this obstacle by rigid examinations, while at the same time striving in every possible way to get the students in-

terested. We are now attempting to have our otological course a graded one, starting with the sophomore year, and requiring the student to carry the information acquired in the sophomore and junior years to his practical senior subclinics.

NIGHT BLINDNESS AND THE MALINGERING OF NIGHT BLINDNESS.—Henry Smith, London, *Jour. A. M. A.*, September 24, 1921: After commenting on the frequency of this condition in countries with compulsory military training the author states his belief that the larger percentage of these cases are malingerers—the importance of the pupillary reaction is emphasized. In a true case of night blindness there is a slowly and uniformly progressive degeneration of the retina that is bilateral. The active reaction of the pupil to light becomes progressively sluggish in proportion to the progress of the disease. As the disease progresses the field of vision contracts. In examining suspected malingerers the fields of vision should always be taken by the direct method. Dr. Smith having had the opportunity to observe many cases of night blindness is forced to the conclusion that the disease is incurable.

W. G. S., JR.

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1897

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1910

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	George H. Rhodes,
	Helen C. Palmer.

1913

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Treasurer,	Albert E. Cross, Worcester, Mass.
Necrologist,	E. W. Beebe, Milwaukee, Wis.
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	Wm. Muncy,
	G. J. Palen,
	Robert M. Jones,
	J. B. S. King.

1913-1914

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1914-1915

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	M. W. Conroy, Springfield, Mass.
	William McClean, New York.
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Necrologist,	George W. Mackenzie, Philadelphia, Pa.
Censors,	George W. Mackenzie, Philadelphia, Pa.
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	Alfred Lewy, Chicago, Ill.
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	C. E. Allen, Kansas City, Mo.

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	L. E. Hetrick, New York.
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	S. B. Moon, Pittsburgh, Pa.

1918-1919

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Secretary,	Neil Bentley, Detroit, Mich.
Treasurer,	William M. Muncy, Providence, R. I.
Necrologist,	Ella G. Hunt, Cincinnati, Ohio.
Censors,	Frank O. Nagle, Philadelphia, Pa.
	H. N. Sage, Columbus, Ohio.
	Alfred Lewy, Chicago, Ill.
	William J. Blackburn, Dayton, Ohio.
	M. W. Conrow, Springfield, Mass.

1919-1920

President,	William McLean, New York.
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Necrologist,	Ella G. Hunt, Cincinnati, Ohio.
Censors,	Irvin D. Metzger, Pittsburgh, Pa.
	J. W. Stitzel, Hollidaysburg, Pa.
	Mary L. Lines, Brooklyn, N. Y.
	D. W. Miller, Blackwell, Okla.
	Frank B. MacMullen, Detroit, Mich.

1920-1921

President,	George W. Mackenzie, Philadelphia, Pa.
1st Vice-Pres.,	Alfred Lewy, Chicago, Ill.
2d Vice-Pres.,	C. E. Beeman, Grand Rapids, Mich.
Secretary,	Neil Bentley, Detroit, Mich.
Treasurer,	William M. Muncy, Providence, R. I.
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NEW BOOKS

THE PRACTITIONER'S OTOLOGY.—By Gilbert J. Palen, A.B., M.D., and Joseph V. F. Clay, M.D. Printed by The John C. Winston Company, Philadelphia, Pa. Price, \$3.00.

THE PRACTITIONER'S OTOLOGY, by Palen and Clay, is just what its title indicates; that is, a concise work on otology for the use of the general practitioner who would like to know more of the subject of otology and yet be spared the effort of searching the more technical textbooks primarily written for the specialists. It is well-prepared and should recommend itself to the busy practitioner of general medicine. G. W. M.

THE NOSE, PARANASAL SINUSES, NASOLACRIMAL PASSAGEWAYS, AND OLFACTORY ORGAN IN MAN. A GENETIC, DEVELOPMENTAL AND ANATOMICO-PHYSIOLOGICAL CONSIDERATION.—By J. Parsons Schaeffer, A.M., M.D., Ph.D. With 204 Illustrations, of which 18 are printed in Color. Philadelphia, P. Blakiston's Son & Co. Price, \$10.00.

This is the most comprehensive, up-to-date, accurate, and best illustrated book of its kind ever prepared by anyone on this or the other side of the Atlantic. More cannot be said of any book. No rhinologist can be without it and claim to be up-to-date. It contains 369 pages, including the index. There are 204 illustrations, of which 18 are printed in color. G. W. M.

A DIFFICULT TASK.—The village grocery assembly was discussing the sudden death of a neighbor who had left a rather helpless family.

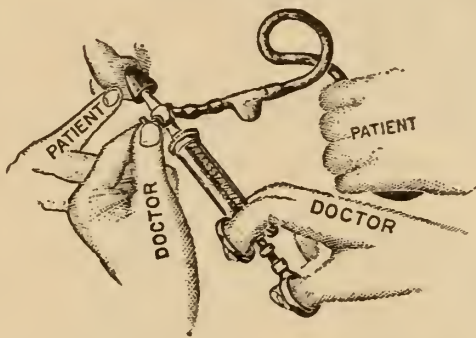
“And the worst of it is,” said old Uncle Bill, “that there isn’t one of those boys that has the head to fill the old man’s shoes.”—*Harper’s Magazine.*

Dr. Harmon Smith’s— Vacuum Sinus Syringe

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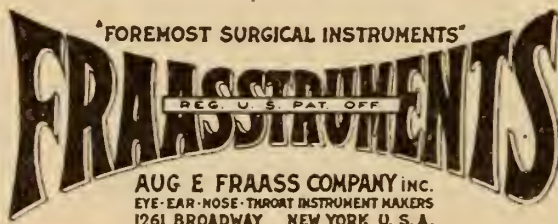
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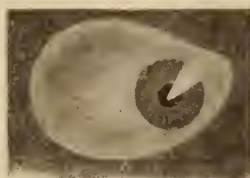
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Journal of Ophthalmology Otology and Laryngology

Vol. XXVI

MARCH, 1922

No. 3

Editorial

NEW COLLABORATORS

THE Editor takes pleasure in announcing that he has been successful in securing the assistance of five collaborators who promise much for the future of the JOURNAL. They have all seen active service with the United States military forces during the World War. Besides each has rendered more or less creditable service to the cause of our specialties, the detail account of which appears below. Gentlemen of such proven patriotism and ability cannot help but serve well any cause with which they are associated. With gentlemen of their type to share the responsibilities the Editor feels justified in reiterating that the future welfare of the JOURNAL is definitely assured.

G. W. M.

JOSEPH V. F. CLAY, born in Philadelphia, Pa., December 21, 1883. Preliminary education received in the Philadelphia public schools. Graduated from the Hahnemann Medical College of Philadelphia, June, 1906. Served one year as Interne in St. Luke's Homœopathic Hospital, Philadelphia. Associated with Dr. Gilbert J. Palen from 1908 to 1919.

Served in the U. S. Navy Medical Corps, September, 1918, to February, 1919, in charge of the eye, ear, nose and throat department of the Naval Hospital of Philadelphia. Associate Professor of Otology in the Hahnemann College, Philadelphia, and Assistant Otologist to the Hahnemann Hospital. Junior Laryngologist and Otologist to the Women's Homœopathic Hospital of Philadelphia. Consulting Otologist and Laryngologist to the Taylor Hospital at Ridley Park, Pa. Elected to Fellowship in the American College of Surgeons 1916. Co-author of "The Practitioner's Otology."

EDITORIAL

LLEWELLYN EVANS HETRICK, 30 West 48th St., New York City. Oto-laryngology (exclusively). Graduate of Rutgers College Preparatory School, 1894; Hahnemann Medical College and Hospital, Philadelphia, 1898; Post-Graduate College New York Ophthalmic Hospital, 1906; Fellow American College of Surgeons, 1921. Professor Otology, College New York Ophthalmic Hospital; Associate Professor Otology, New York Homœopathic Medical College; Aurist, Hahnemann and Fifth Avenue Hospitals, New York; Aurist, Flower Hospital, New York; Aurist, Metropolitan Hospital, New York; Aural Surgeon, New York Ophthalmic Hospital; Consulting Aurist, Broad Street Hospital, New York; Community Hospital, New York; Jamaica Hospital, Jamaica, L. I.; Grace Hospital, New Haven, Conn.; Ann May Memorial Hospital, Spring Lake, N. J.

War Record.—Commissioned Captain M. R. C., U. S. A., April 26, 1917. Ordered into service June 13, 1917. Stationed, M. O. T. C., Fort Benj. Harrison, Base Hospital, Camp Lee, Va. Camp Merritt, N. J. Camp Mills, N. Y. A. P. O. 780, A. E. F. France, Camp Upton, N. Y. Discharged May 29, 1919.

DOUGLAS MACFARLAN, Philadelphia. Born in Philadelphia, October 14, 1886.

Preparatory Education: William Penn Charter School, Philadelphia; B. S., University of Pennsylvania, 1908; M. D., University of Pennsylvania, 1911.

Interne in Presbyterian Hospital (New York), New York Health Laboratories, Episcopal and Polyclinic Hospitals, Philadelphia.

Member of Philadelphia Laryngoscopical Society, O., O. & L. Society, American Academy of Ophthalmology and Otolaryngology, American Medical Association, Philadelphia County, and Pennsylvania State Societies.

Associate Editor of JOURNAL OF OPHTHALMOLOGY, OTOTOLOGY AND LARYNGOLOGY.

GEORGE ELLIOTT GRAHAM NORTON. Born in New York City, September 14, 1888. Parents, Dr. George S. Norton and Katherine Graham Norton.

EDITORIAL

Graduate of Mercersburg Academy, 1907; Syracuse University, 1911; New York Homœopathic Medical College and Flower Hospital, 1915; New York Ophthalmic College and Hospital, 1920.

Fraternities, Phi Delta Theta, Alpha Sigma, and Class Fraternities.

Internship at Laura Franklin Hospital, and Hahnemann Hospital of New York City.

Began practice of Ophthalmology in association with uncle, the late Dr. A. B. Norton, in September, 1916.

Commissioned lieutenant in the U. S. Army, May, 1917; assumed active duty July 15, 1917, and moved with troops to Fort Hancock and Sandy Hook Proving Ground. Service of one year with artillery, then sent to Camp Upton in charge of instruction of medical officers. Resigned with rank of captain December, 1918.

Present hospital and college appointments: Assistant Surgeon, New York Ophthalmic Hospital; Courtesy Staff Hahnemann Hospital and Fifth Avenue Hospital; General Quizmaster at New York Ophthalmic College.

WILLIAM DENTON ROWLAND, born at Greencastle, Pa., December 6, 1879. Attended public schools of Washington County, Maryland. Later, attended Lebanon University, Lebanon, Ohio, 1898-99. Taught school in Washington County, Maryland, for five years. Pulte Medical College, 1900-02. Antioch College, 1908 (first year). University of Michigan, Homœopathic Medical School, 1908-11. M. D. 1911 from University of Michigan. Intern in University Homœopathic Hospital, Ann Arbor, Michigan, 1911-12. Senior House Surgeon New York Ophthalmic Hospital, 1912-13. Instructor Homœopathic Medical School, Department of Ophthalmology and Oto-Laryngology, University of Michigan, 1913-14.

In practice at Asbury Park, N. J. Eye, ear, nose, throat, 1914-18.

In Army Medical Service, U. S. A., France and Germany, 1918-19, with Base Hospital 44, Evacuation Hospital 19, etc.

Located in Boston, January 1, 1920, for practice of Ophthalmology.

Surgeon, Ophthalmic Staff, Massachusetts Homœopathic Hospital, Boston.

EDITORIAL

Clinical Instructor in Ophthalmology, Boston University Medical School.

Visiting Ophthalmologist to Westborough State Hospital, Westborough, Mass.

Certificate from The American Board of Ophthalmic Examinations, 1921.

O., O. AND L. CONVENTION

QUOTING part of the Secretary's letter (Dr. Neil Bentley, Detroit, Mich.), of February 2nd, viz.: "We are going to have a first class meeting. I have had more interest than usual shown in the letters I sent out, calling for papers, etc. Moreover, Chicago is very central and the Chicago men can always be depended upon to pull off something top-notch." These 1922 co-operative symptoms are exceedingly gratifying for I assure you there are no toxic disturbances within the Society.

The best convention room in the Hotel Drake has been reserved exclusively for the O., O. & L. Society. It is located upon the mezzanine floor, easily accessible, close to the exhibits and not far from the lobby.

Monday morning and afternoon and Tuesday morning will be devoted to our regular scientific program. Arrangements have been made for a clinic at the Cook County Hospital, Tuesday afternoon. Tuesday evening there will be an O., O. and L. dinner; following this the Society will adjourn to the convention room as this is the regular night for the Bureau of Medical Economics.

At the New York meeting of the Bureau Chairman, January 28th, it was decided to create a "Co-operative Session" on "Disturbances of the Upper Respiratory Tract with Associated Eye and Ear Complications," as a special feature during the convention.

A very comprehensible, scientific and detailed plan has been outlined, thus adding something new and valuable to the general program. This will be featured Wednesday and Thursday mornings.

Wednesday will be an afternoon left open for sight-seeing, visiting special bureaus of the A. I. H., or participating in the O., O. and L. golf tournament.

EDITORIAL

On Thursday afternoon there will be a joint meeting of the A. I. H. and O., O. and L. Societies. This combined meeting will be "A Star Headliner" for the profession during the week. The subject of endocrinology, which is particularly interesting, in all special branches of medicine, will be handled by the internist, surgeon, gynecologist, obstetrician, ophthalmologist, otologist, laryngologist and anaesthetist. The meeting will be important, not only from an educational standpoint, but especially attractive in getting together. Co-operation is the successful medical marching tune of the day.

J. R. McCLEARY, *President.*

TO DUBS AND EXPERTS

P. S.—WATCH FOR THE SPECIAL ANNOUNCEMENT IN THE APRIL ISSUE TO THOSE WHO PLAY GOLF AND TO THOSE WHO *THINK* THEY PLAY GOLF.

McC.

INERTIA

HOW many perfect operators are there among the world's ophthalmologists? Will there be a dissenting voice when the writer says "None"?

Perfection is an ideal, theoretically attainable, practically a rainbow, but our efforts to reach it drag us from the mire of mediocrity and make us the better for the striving. How many of us are on our toes with arms outstretched and fingers tingling from the desire to gain another millimeter toward the rainbow? All too many of us are wont to say, "Only one failure in a hundred cases. Not a bad average. A damnsight better record than Smith's;" and then we squander some energy twisting an arm behind us to administer the resounding slap on the back, and squander a little more energy explaining to others and vainly trying to convince ourselves that the one failure was because the vitreous was becoming fluid, or the patient was intractable, when we know full well that a hair-line perfection of technique would have brought success. Not that we counsel yelling it to the world or brooding over it in quiet, but at least let us admit it and profit by it.

EDITORIAL

Any man can bring the skill of his left hand to a parity with that of his right, yet every day we see operators change fixation forceps from one hand to the other or step to a different position, the better to use an instrument. Many incisions are made with five strokes when two would suffice if properly executed. A Graefe knife has not a five-centimeter cutting edge so that we may use a three-and-a-half. Speculi, retractors and suture fixation all have their indications, yet if the operating-room nurse has sterilized a speculum and we find it on the tray, we are all too prone to use it without considering what might be the advantage of another method in that particular case. A conjunctival flap gets in our way, not only once but several times, when one second of thought and five seconds of action would get it out of our way and prevent buttonholing and the subsequent risk of infection. Incorrect pressure upon a rubber bulb while irrigating an anterior chamber causes a motion of the pipette and an unnecessary bulging of the wound, when a moment's experimentation, while away from the operating table, would show us a way of exerting this pressure without motion.

We could rant this way over ten pages and recall scores of "trifling" breaks of technique made by men of reputation, and then when we had finished, someone would say, "Well, what if the wound did bulge, or if we did take five strokes, or if we did change hands?"

It is just the difference between good operating and mediocre operating, and way down in our skeleton closet, called memory, we know of an eye that has been lost.

G. E. G. N.

DR. JOSEPH MACDONALD

DR. MACDONALD, publisher of the *American Journal of Surgery*, died suddenly in his office, January 7th, of cerebral hemorrhage, aged 51. All his adult years were spent in medical journalism. At first manager in the office of the *International Journal of Surgery*, in 1905 he resigned to become the founder of the *Surgery Publishing Company* and the *American*

EDITORIAL

Journal of Surgery (formerly the *American Journal of Surgery and Gynecology*). In 1916, associated with Dr. S. Martin, of St. Louis, he established the *Medical Pickwick*. Dr. MacDonald was ex-president, and for many years, secretary of the Medical Editors' Association. An officer in the Medical Reserve Corps of the United States, upon our entrance into the World War he was commissioned Captain, and in 1917 Major. He was most energetic in striving to stimulate physicians throughout the country to enter military service.

He is survived by his wife and a sister, Mrs. W. C. McKeeby, wife of Dr. McKeeby, of Syracuse, N. Y.

NEW BOOKS

CATARACT AND ITS TREATMENT.—By Henry Kirkpatrick, M.B., Oxford University Press. American Branch, 35 West 32nd Street, New York. Price, \$3.75.

The author takes up the subject in an orderly and thorough manner, omitting nothing of importance. He considers every phase of the subject in a manner calculated to bring home all that is essential to a knowledge of the subject. Every oculist will do well to have a copy for ready reference. There are sixty-one illustrations appropriate to the subject. G. W. M.

THE SUBMUCOUS RESECTION OF THE NASAL SEPTUM.—By W. Meddaugh Dunning, M.D. Surgery Publishing Company, New York, 1921.

This book is compiled from a series of papers that were written by the author for the *American Journal of Surgery*, January, February and March, 1921. The book is of special value to the beginner. The technique described is quite simple. The book contains 97 pages and is amply illustrated. G. W. M.

POST-GRADUATE COURSE IN VIENNA

The Editor will conduct a Summer trip to Europe during July and August. About five weeks will be spent in Vienna, Austria, for intensive study of Ophthalmology with the best teachers on the subject. The class is limited. For further particulars consult the Editor.

RECENT WORK ON THE LABYRINTHINE FUNCTIONS*

C. R. GRIFFITH, Ph.D.,

Department of Psychology, University of Illinois,
Urbana, Ill.

MR. PRESIDENT and members of the Society: I think that we may get upon common ground sooner if we spend the first minute or two in reviewing the history of the labyrinth functions or of the general functions of balances; for the discussion is, I believe, limited entirely to that field, and has nothing directly to do with the problems of audition. Most of you will remember that the investigations that finally led to the discovery of a new end-organ—an equilibratory end-organ—began as early as 1790; but it was not until 1824 that Flourens, a physiologist of some note, cut out portions of the cerebelli of pigeons, and compared the remarkable disturbances of equilibrium so initiated with the disturbances appearing when the integrity of the semi-circular canals was violated. These and other observations of Flourens were subsequently gathered together and printed about 1842 in a volume that has become classical in the field of vestibular physiology. Flourens' work brought the whole problem of equilibrium to the attention of a good many investigators, and it precipitated a lively discussion as to whether a fundamental distinction could be drawn between the functions performed by the semi-circular canals and those performed by the cerebellum. When the question was put to experimental test by cutting or exciting in any other way the semi-circular canals, it was discovered that the cerebellum need not be affected in order to bring about disturbances of equilibration. After years of investigation it was established that the non-acoustic portion of the ear was vitally concerned in the business of maintaining the upright position of the body, and in making possible the compensatory movements by means of which the body adjusts itself to any interference with its upright or "normal" position. These observations introduced an important chapter in the science

*Presented at the annual meeting of the O., O. & L. Society, Washington, D. C., June, 1921.

RECENT WORK ON THE LABYRINTHINE FUNCTIONS

of physiology; and you will remember that in the journals of the period between 1850 and 1900 nearly 1,000 distinct and rather significant researches were made upon the semi-circular canals and upon other parts of the equilibratory mechanism. So far as my survey has gone, nearly 2,000 contributions relating to this subject, have been published to date in the various physiological and medical journals.

In 1874 three investigators, Mach, Brever and Crum Brown came almost simultaneously upon a theory as to the way in which the semi-circular canals were excited during and after changes in the position of the body. These three articles, which were published within a few weeks of one another, gave accounts of researches alleging that the movement of the body about an axis passing through the head, or about any other axis of rotation produces, as the result of inertia, a flow of the liquid in the canals. It was further alleged that this flow affects the cilia-like end-organs in the ampullar enlargements; and that, as a result, the neural excitations passing along the eighth nerve to the cerebellum, and communicated, in turn, to the musculature, bring about the compensatory movement so characteristic to the body during sudden changes in position.

By 1900 the general features of semi-circular canal physiology and anatomy were fairly well depicted. The canals were known to lie in the three planes of space and so to be admirably adapted for equilibratory functions. Their phylogenetic history indicated a similar function. Variations in their form and arrangement and in their ontogenetic development correlated very well with the different abilities of animals to adjust themselves to disturbances of equilibrium. The theoretical mode of excitation of the canals, making use as it did of the physical principle of inertia, was cleverly devised to make of the organs minute balances of the body under all conditions. Finally, enough was known of the central connections of the new receptor to show that, by way of the cerebellum, the canals were in close functional relations with the entire body, muscular, vascular and glandular. All of these physiological and anatomical facts were aided by a crude psychology which sought to relate the experiences of dizziness, vertigo, swimming and nausea to excitations of the canals.

It was not until 1900 or thereabouts, however, that the prob-

lem of the relation of the semi-circular canals to equilibration became of any great clinical significance. About that time, the investigations of Alexander and of Höyges, and later, those of Bárány brought a revolution in aural surgery and pathology. These men and others established in Vienna a clinical school for the study and treatment of pathological ears and cerebellum. They gathered into the clinic a large number of individuals who, apparently, had something the matter with their semi-circular canals, and who betrayed this difficulty by all kinds of bodily disturbances strikingly similar, even in the details, to the disturbances found in the physiological laboratory. The most important of these disturbances was an ocular twitching known as nystagmus. Curiously enough, the ocular nystagmus coming from this pathological disturbance of the semi-circular canals was almost, if not quite, the same in kind as comes from surgical interference with the semi-circular canals. Because of these facts the clinical and surgical problems were put up on the same basis, and all researches made from then on have had these two ends in view.

As a result of certain investigations on the vestibular nerve and upon the cerebellum, Höyges had published, as early as 1881, some papers in which he related each one of the semi-circular canals through the cerebellum to each pair of eye muscles in such a manner that their oscillatory movements could be attributed directly to disturbances in the semi-circular canals. Bárány came upon this work of Höyges, and coupling it with certain neurological investigations of Ramon y Cajal and Golgi, and with work done by himself, he conceived a brilliant scheme of vestibular and cerebellar diagnosis, a scheme which earned for him in 1911 the Nobel prize. Individuals who were suffering from pathological disturbances in the cerebellum or in the ear could be artificially stimulated, he said, the direction and character of the nystagmus noted, and some kind of diagnosis made as to the functional integrity or "normality," of the structures. You will remember the great importance that was attached to the Bárány tests, and the hope it brought that this would be a means of successful diagnosis and of getting at cerebellar disturbances of one kind or another without surgical procedures.

During the war, the Bárány material was translated into English by a number of different investigators; but the historical back-

RECENT WORK ON THE LABYRINTHINE FUNCTIONS

ground, which lay largely in Germany and Austria and in Italy, was left out of account. Into this country came the bare conception of ocular nystagmus as a sort of reflex response to vestibular stimulation. It was thought that ocular movements issued from vestibular stimulation in much the same way that the knee-jerk issues from a given tap, and the iris responds to different intensities of illumination. If this conception of nystagmus as a simple and invariable reflex had been true, otological practice would have had a remarkably clever means of diagnosis; for the semi-circular canals can be stimulated by electrical, chemical, thermal, and mechanical means, and the disturbances elicited can be easily controlled and described. By taking account especially of the ocular movements produced, and by noting any irregularities, diagnosis proceeded. The variations were taken as indicative of abnormalities in the semi-circular canals, along the eighth nerve or within the cerebellum itself.

The whole procedure rested then upon the assumption that the ocular movements following rotation, for example, are simple and invariable reflexes, and sustain under ordinary conditions, a constant relation to the stimulus. The assumption was a brilliant one and played admirably into the hands of the otologist, for if the ocular movements were of the simple reflex type and, therefore, ordinarily invariable, and if, in spite of this fact, wide variations appeared, the variations must be indicative of changes somewhere in the structures involved.

At the time that the conception of the simple reflex character of nystagmus was established most firmly in army circles, certain officers (notably Dunlap and Bentley), belonging to the psychological service, found evidence which showed, as they believed, that the nystagmus movements were not simple reflexes, but that they were part and parcel of a complex equilibratory adjustment. Their observations were founded on experiments with professional dancers and with enlisted men in the Army Air Service. They found, for example, that repeated excitation of the canals leads to a profound modification of these alleged reflexes. So again the question was raised as it has been frequently, as to what the semi-circular canals are, what is their mode of operation, and just what their function is in the body. Taking our departure then, as we did from the Bárány test for "normality," the obvious thing to

do was to rotate a large number of human subjects and to see what the facts were regarding vestibular excitation and response.

On the side of method, we turned first to otological procedures; and the initial discoveries were of this sort. At the Mineola Laboratory, we learned of a man who was to be whirled in a revolving chair. According to the Bárány assertions, he should have been rotated ten times in twenty seconds and have had an ocular movement lasting for about twenty-five seconds. The first time he was rotated thirteen times in nineteen seconds; and the second, nine times in twenty-six seconds. That looked a little bit dubious to us, and we turned then for help to certain other quarters. At one of the other aviation camps an individual was placed in a chair and rotated, first to the right and then to the left; and the ocular movement in the two directions averaged about twelve seconds. This being apparently too low for normality, the physician put him in the chair and again rotated him twice as fast—that is to say, ten times in ten seconds—to increase the length of nystagmus if possible. It jumped from twelve to twenty-two seconds, and the individual was passed into the aviation service.

These are, of course, extreme cases; but we found that the first need in any new investigations was a rigid scientific method—a rigid control of rotation, and an adequate means of registering time intervals. We felt that a chair that could be rotated and stopped under known conditions, that would turn without observable change in acceleration, and one whose rate of rotation could be measured by electricity, was highly desirable. We secured such a chair and rotated forty individuals at definite intervals for nearly two years. Some of the individuals were tested by an otologist who had had experience in the administration of the Bárány tests in the army camps. All of the subjects that we used were normal, according to the standards then existing. In our new experiments we rotated these individuals under varying conditions, for varying lengths of time, during the course of two years. Some of you know the results of that kind of rotation. We found that the resulting ocular movements are exceedingly variable. Their appearance depends upon all kinds of conditions, and most of these are only poorly known at the present time. For instance, in the otological laboratory, individuals were rotated ten times in twenty seconds; and if the chair went too far it was jerked back. We discovered

RECENT WORK ON THE LABYRINTHINE FUNCTIONS

that such a method might make a difference of from five to twelve seconds in the duration of nystagmus. We found that the duration of nystagmus was exceedingly sensitive to the number of turns, to the physical state of the individual, to his nervous condition, and to whether he was attending to himself or to objects external to himself. We found that the nystagmus observed under "normal" conditions may not be the nystagmus we are looking for at all, and the characteristic quick and slow movements are not necessarily peculiar to vestibular nystagmus. We discovered that the wide difference between individuals in this respect may depend upon the character of fixation. Among other methods, we mounted upon the rotation chair a moving picture camera. Under these conditions we photographed the ocular movements occurring both during and after rotation. The pictures were made by ultra-rapid photography enabling us to get an exceedingly fine analysis of these movements.

Such a method was not enough, however. We found it necessary to know of the movements of the eyes while the eyes were closed. To this end we have decided to use an instrument devised by Professor Raymond Dodge. This instrument consists of a pair of modified spectacles holding very small mirrors which rest upon the closed eyelid. As the eye moves back and forth, the bulge of the cornea causes the plane of the mirror to move back and forth in the opposite direction. A ray of light thrown on these mirrors and reflected to a large screen, makes possible a great enlargement of exceedingly small movements. In this manner we hope to secure reliable information concerning the movement of the eyes while the lids are closed.

Preliminary studies have given us an idea of what is actually taking place in the ocular mechanism. We believe we have evidence to show that vestibular nystagmus is a waving undulatory movement, and not necessarily a rhythmic, quick and slow movement; and that the duration of the undulatory movements is usually forty or fifty, or perhaps sixty seconds, the duration depending upon conditions of fixation. Under normal fixation nystagmus decreases, as you know, to twenty-five seconds; and on close fixation the nystagmus may disappear so that there is no observable flicker of the eyes under prolonged rotation. That is to say, the normal tonus of the ocular muscles in maintaining the position of the eyes actually modifies the innervations coming from the vestibular cen-

ters, whatever they may be discovered to be. The sum total of our investigations to date seems to be, then, that the ocular movements are not simple reflexes, but a part of a very complicated equilibratory adjustment; and that they are highly sensitive to variations in the conditions of rotation.

Further investigations, making use of the other bodily movements occurring during and after rotation, point to the same conclusion. We found that during rotation the whole body is stimulated just as definitely as are the eyes. We discovered that it was possible to place an individual in the rotating chair, and to put his arms upon an automatograph, hanging easily from a point above the chair in such a manner as to record the compensatory movements of the arm muscles. A stylus attached to the automatograph registered the movements upon a smoked drum. This method showed that the muscles of the arm were innervated in the same way that the eye muscles are innervated, and that a clinical diagnosis that depends upon past pointing is just as unreliable as a diagnosis depending upon the ocular movements. Under our conditions the innervation of the muscles that issues, apparently, in past pointing, was found to continue as long as ocular nystagmus, and that repetition can and does lead to a profound modification of the innervation of the muscles from the semi-circular canals.

As a further test we took six more human subjects and rotated them under rather unique conditions. The first few days they were given a single turn each. A single turning, we found, was not enough in that case to elicit any movement of the eye. The eye was observed through a reading microscope centered on the edge of the cornea, so that we could detect very small movements; and the single turning failed to elicit any movement. For three or four days we gave a single rotation, and repeated it ten times, five times to the right and five times to the left. On the fifth day we gave two rotations. On the eighth or ninth day we gave three. That is, we gradually increased the number given until, at the end of a certain length of time, we brought these individuals to a point where they could be rotated ten times in twenty seconds without any ocular movement, apparently, in any direction.

In other words, we had built up in him a "tolerance" for rotation, without at any time in the course of the investigation having aroused an ocular movement or a movement that could be called

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past pointing, or any vertigo, dizziness or anything that could be thought to approach the vestibular adjustment pattern. By thus starting in an opposite direction, where the rotation was too small to excite any movement, we reached, by repetition, the same point we had reached in the first series, where we had begun with a rotation long enough to result in fairly intense systemic compensations. Again, then, we had evidence to show that the vestibular mechanism does not work so simply as has been commonly supposed.

The investigations done on the human subject came to a temporary close because we did not know what damage we might be doing to the semi-circular canals and to the equilibratory mechanism of the individuals. We felt somewhat assured, it is true, for we rotated a number of aviators who had had long experience in performing various feats in the air, and found that, although they invariably had a decreased nystagmus, they were suffering no ocular handicap. In all our cases we found that if experienced aviators were repeatedly rotated, day after day, they became fully accustomed to that sort of rotation, all nystagmus disappearing in a very short time. As a matter of fact, the extremely rapid rate at which nystagmus decreased led us to believe that their flying practice had already led to a notable modification of nystagmus, and that the small amounts we found were due merely to the slight changes in the conditions of rotation. It will be recalled that the ocular movements are exceedingly sensitive to changes in the conditions of rotation. We were further influenced in this direction by the discovery of some experienced aviators who had no initial nystagmus at all. The same individuals could be rotated in any plane, with any reasonable speed, for any reasonable length of time, without a perceptible quiver of the eye or any qualms whatever.

In spite of the fact that no immediate ill effects appeared from repeated and prolonged rotations we did not know just what we were doing to these individuals. We appealed, therefore, to animals. Now most of the work of the 70's, 80's and 90's was done on animals. That is to say, a great deal of our knowledge of the ear has issued from animal subjects. We turned, therefore, to the white rat. Its equilibratory mechanism is quite similar to that of the human being; it breeds rapidly; it is a clean animal; and its lack of ability to fixate objects makes it an especially desirable

laboratory animal in this connection. Now we had a suspicion that mere turning was not the cause of the decrease in nystagmus that we had found; but that either repeated or alternate positive and negative acceleration was the real cause. We set up, therefore, on a control, an apparatus consisting of a number of constantly rotating cages. There are now seventeen of these cages. In them, we placed the rats and set them rotating. Since that time, we have had three successive generations, without any of the rats having known anything but a constantly rotating environment. Some of the cages rotate once in a second, some twice in a second, and some two and a half times in a second. The animals eat, play, sleep, mate and carry on their normal life functions in these rotating nests. Alongside of these we have a series of normal individuals, the history of every individual being known for eighteen generations. We know everything that has happened to each individual.

Other subjects have been rotated under other conditions upon a small rotating platform. We have rotated rats ten times in ten seconds, ten times in twenty seconds, ten times in thirty, ten times in forty, and ten times in fifty seconds. We have rotated them at different speeds for different lengths of time. These rotations have been repeated from day to day in some cases, every other day in other cases, and only once in others. We have used every possible control. Feeding has been controlled. They have been rotated under the influence of ether, strychnine, morphine, curare, and other drugs that have a differential effect upon the central nervous system and upon the afferent and efferent nerve fibres.

As the result of these investigations, we believe that we are gaining a good deal of evidence concerning the real function of the semi-circular canals. We may even come upon a new interpretation of the mechanism and to some new facts as to how the semi-circular canals act as an end organ in maintaining the equilibration of the body. If this is true, it is our hope that those interested in the serious clinical problems that arise in connection with the vestibular apparatus and the general equilibratory mechanisms may find some facts of interest to them. I have said that the white rat is an admirable animal to rotate, for there is no organic means of fixation; and you get the same result as you would if the eyes were closed or the individual were rotated in total darkness. We have been able to measure the nystagmus times in a large number

of conditions. We have been able to measure the decrease of nystagmus. These investigations verify the results in human subjects. That is, they show that nystagmus is exceedingly sensitive to every varying condition—the condition of the individual; the presence of drugs, especially the differential drugs that act on various parts of the nervous system as excitants or depressants. These have a profound effect on nystagmus. We have also dealt with other bodily complications. We rotated the rats, and took moving pictures of their behavior during and after rotation. We have a good many pictures taken by means of ultra-rapid photography of the movements of the limbs, the movements being of the same kind that we find in past pointing in the human subjects. An analysis of these movements throws into clear relief the several events that issue from rotation under different conditions.

We have found further evidence, we believe, to show that nystagmus is not necessarily rhythmic; that is to say, it may be undulatory in nature. We have also discovered that the nystagmus may proceed without regard to what happens cerebrally. In other words, the equilibratory mechanism seems to be entirely a cerebellar and bodily function. We believe that our evidence shows that we cannot break the equilibratory function into parts, as we have been accustomed to do, and speak of one particular response as indicative of the condition of the body as a whole; but that the reaction is a systemic reaction, an adjustment running back in genetic history to the lateral line canals in the fish. You know of the evidence which goes to show that the semi-circular canals may be outgrowths of the primitive equilibratory organs in the lateral line canals. We have found that our rats may rotate for months in these cylinders, and yet have nystagmus lasting only so long as is the case when they are rotated for fifteen seconds. Rotation, apparently, does not materially affect the vestibular mechanism; but by putting them on the small rotating table and changing their speed of rotation (successive changes positively or successive changes negatively, or both positive and negative changes) we can cause every individual so treated to decrease in nystagmus very rapidly.

Evidently, then, nystagmus is not a simple reflex, but a part of a complicated body reaction; and the other bodily reactions decrease or increase under the same conditions.

We are now fairly well along with our observations on the

white rats. Here are rats that have been rotated for twelve or fourteen months in these cylinders. When we take them out, they may walk in the opposite direction for three or four weeks stopping only to eat and to sleep. After a few months, we find that they get sick, and finally die. If, however, they are put back in the cylinders before death, they may come back to health again, and live as long as we keep them there. We mated them with unrotated rats, but had difficulty in keeping the litters alive. Extermination threatened this rotated series. It occurred to us one day that perhaps the shock of birth, together with some pronounced organic shock laid down in the nervous system because of the long-continued rotation, might be too much for the litters; and to eliminate one of the shocks, we took the litters and put them, with a female, in the rotating nests—and preserved our litters! We had removed what apparently was a very pronounced organic reverberation which appeared in the first generation after rotation.

We are taking these rats which show all kinds of pathological disturbances, and subjecting them to thorough physiological and neurological examination. We believe that we have found, in our laboratory, rats presenting all the symptoms that you would find in a typical picture of cerebellar or vestibular abnormality. If the descriptions of the medical men who have visited our laboratory are correct, we have produced all kinds of pathological ears, quite identical with the ears that you have to treat in every-day life. We have these in the second and third generation after rotating. These subjects are being carefully preserved. We take out the cerebellum, the semi-circular canals, and the upper part of the spinal cord, and expect to subject them to histological examination. We believe that we shall find structures showing where the modified end-organ really arises and the pathways usually involved in equilibratory adjustments. This is the only way to get into the cerebellum successfully without destroying the equilibratory mechanism. We hope to get some evidence concerning the equilibratory mechanism that will be of value clinically and practically in the laboratory.

You ask now what is the significance of all this for the practical clinician? I wish I could tell you. Several otologists have been at our laboratories to see this work. I told you where our point of departure was. We took it from their Bárány tests for vestibular normality. We think that we can show that these tests

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are not reliable tests, where the history of the subject is not thoroughly known and where an allowance—yet to be determined—is not made for the extreme sensitivity of the vestibular mechanism under repeated turning. We believe that such things as the amount of turning that a boy may have had in his swing may affect the amount and character of the nystagmus throughout his later life; and these facts must be known before the Bárány tests can be considered tests of normality or of cerebellar disturbance. It may be that pathological cases presenting recurrent disturbances of the inner ear and recurrent spells of vertigo can be subjected to our method of cumulative rotations and so to build up their “tolerance” and effect a cure. We have such an individual in our laboratory now, and have started her on the course. The first day she could stand only a quarter turn in rotation without experiencing dizziness and nausea and presenting the most pronounced eye movements. A quarter turn was given on successive days, and then increased to a half turn and to a full turn and so on, until the individual could stand four or five full turns a day without any disturbance. What the outcome will be, I do not know; but it at least furnished a suggestion; and some of the other facts that we have found concerning the mechanism of equilibration may furnish suggestions for you in your clinical work. I have stated them as I see them at the moment; but, being quite unfamiliar in detail with the clinical problem with which you have to deal, I shall have to stop. (Applause.)

DISCUSSION

G. W. MACKENZIE, Philadelphia, Pa.: Professor Griffith has told us much that is new in experimental research and I feel it must eventually prove of value clinically. It is difficult for anyone to attempt to discuss all the issues that have been raised. Until recently Bárány had given his figures for after-turning nystagmus after ten turns from twenty to forty seconds. I believe I was the first to point out that it was twenty-four seconds. No one else accepted my figures at the time but I believe they are generally accepted today.

I have here a list of findings of Bárány and my own in a paper presented before the American Triological Society several years

ago. Bárány has been quoted by Ruttin, by Braun and Friesner, and by otologists generally up to a short time ago, including his figures for after nystagmus, which ran as high as one hundred and twenty seconds. My figures were twenty-four seconds. I have a letter from Dr. Isaac Jones, written when he was in charge of the aviation department of the United States Army. Jones claims that out of many thousands of cases they found my figures were corroborated and not those of Bárány.

At the time that Bárány gave his figures and I gave mine, the question of technique arose; and I notice that it arose again to-day when Dr. Griffith said that at Mineola they found after ten seconds of slow turning they had an after-turning nystagmus of eleven or twelve seconds. They take the same subjects and turn them ten times rapidly, and then they get about normal figures, or twenty-four seconds. This same point is covered in the paper which I read on "After-Turning Nystagmus," and have an abstract of today. According to the experiments made on many hundreds of human beings I found that the duration of after-turning nystagmus was not shortened by slow turning. It was the same after slow turning as after rapid turning, but the great difficulty was in observing the nystagmus after slow turning. It was so slight in degree that unless one exercised careful technique, it escaped notice. After rapid turning the nystagmus showed a wider excursion and more intensity, but the duration was not different.

I notice that Professor Griffith mentioned the vestibular reflex, and prefers to call it equilibratory adjustment. I think it a very good suggestion. By observing the extra precautionary technique suggested by Professor Griffith, of having the lids closed and an apparatus put before the eye attached to a mirror reflecting the movements magnified on a chart, there is a tendency to an undulatory and not a rhythmic nystagmus. Kreidl was the first, so far as I know, to study the nystagmus during turning with the eyes closed. If one puts his hands on the closed lips, with the head upright, and moves the head in a complete circle, he will find that the resulting nystagmus is distinctly rhythmic in character; furthermore there is rapid movement of the eyes in the plane and direction of turning, with a slow return movement in the same plane but opposite direction. One can study rotatory nystagmus after the same manner.

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I was very much interested to note that when Professor Griffith turned the rats at a uniform speed for a week it had very little, or practically no effect, in diminishing the after-turning nystagmus after their removal from the cage. When he alternated the speed or reversed it, or speeded it up and then allowed a rest, it did have the effect of diminishing the after-turning nystagmus. Why is that so? We cannot say positively, but we do know that Siebermann, in 1912, at the Otological Congress in Boston, showed some rats on which he had tried the experiment of stimulating the cochlear apparatus by putting them in a bell jar and ringing a bell repeatedly over long periods of time. In his many experiments he used different tones and was able on examination of the inner ear to determine the particular portions of the organ of Corti corresponding to each particular tone by reason of the fact that the organ of Corti had undergone a degeneration similar to that of an occupation degeneration. It is quite possible that some of these rats might, after a series of experiments, provided they were stimulated by unequal and various speeds and reversal of direction, and so on, obtain a similar change in the vestibular labyrinth as occurred in the cochlear labyrinth with Siebermann's rats. This might account for the falling off in the after-turning nystagmus in the rats experimented upon by Dr. Griffith.

On the other hand, we all know that we must consider the possibility of the readjustment of the two sides after a period of rest, as follows in the case of unilateral destruction of the labyrinth. For instance, when the right ear is destroyed, upon turning that individual you will find his after-turning nystagmus to the right is reduced from twenty-four to eight seconds; and that on the left, or normal side, it is reduced from the normal twenty-four seconds to sixteen seconds. That is true for only a very short period of time. In the course of two or three months we find that the nystagmus to the right side that lasted eight seconds, has risen to nine; and on the left it has diminished to fifteen. The right and the left continue to increase and decrease, respectively, until in about a year, the difference is very slight between the two sides. This suggests to me that there has been an adjustment through this delicately co-ordinated mechanism. Nothing could have happened to the normal side, because the reactions on the healthy side are normal.

I am pleased to have heard the paper, and feel sure it is going to be fruitful. I am glad that the universities in this country are doing real scientific work, and that Dr. Griffith is in the field. We are fortunate to have him with us today.

BURTON HASELTINE, Chicago: I am very proud to have been instrumental in bringing Professor Griffith's work to the attention of this Society and especially in arranging to have him with us in person. I have followed his experiments closely and have had the pleasure of visiting his laboratory at the University of Illinois, and observing his extremely interesting work. Not only has he gone further than anyone else with his experimental study of the labyrinth, but he has done it under a more rigid system of checks. Whether or not his conclusions please us, therefore, they at least compel our respectful consideration. No one hereafter can adequately discuss labyrinth physiology without reference to Griffith's work.

My own attitude towards his theories was always sympathetic, because I regarded the labyrinth tests, especially as applied in military service, as often misleading. In a small way I have had some experience with navigation, and sailors, as you know, have some clinical knowledge of labyrinth function. Now a sailor loses his labyrinth reactions with repeated "tests" and becomes a better sailor as well as a more comfortable one thereby. How silly it would be to exclude such a man from marine service merely because we couldn't make him seasick. It is no false analogy to apply these facts to the problems of air service, as seems amply proved by Griffith's experiments.

His rotation experiments with rats have brought out many interesting things, even in addition to those of which he has spoken. I know of no other instance where the transmission of acquired characteristics to offspring has been so strikingly shown. I regard Professor Griffith as the greatest scenario writer of all time, for he has surely "filmed" the Origin of Species. It is like seeing the slow process of evolution reproduced in the cinematograph, and I could imagine Darwin sitting at Griffith's "show."

I hope it will be the good fortune of this Society to have Professor Griffith again and frequently upon its program.

PROF. C. R. GRIFFITH, (closing): It is a little difficult to bring the discussion to a close when I believe that the experimental prob-

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lem is still in its early stages. You will remember that in the history of the subject much that we know of the functions of the semi-circular canals and of the function of equilibration has come from animals; and the chief means of experimentation has been surgical. The animals' ears have been cut or douched, or an electric current passed into the ear, and the observations made. Such methods did not admit of repeated observations. The question that has come down to us has been, therefore: What is the duration of nystagmus after stimulation of the canals? I believe that this is for the moment an irrelevant question. The thing to be found is: Under what conditions does nystagmus appear and under what conditions is it modified? During modification what happens in the cerebellum and in the semi-circular canals? We must remember that equilibration is a tremendously complicated sort of adjustment and that it probably has a long biological history. To select a single item out of an adjustment so deep-rooted is apt to lead us to a superficial treatment of the whole problem of equilibration, or aural pathology and of cerebellar lesion.

The facts are not enough, as yet, to enable us to draw conclusions. I should like to have you remember that the theory of vestibular function, the inertia theory, and the mechanics of the semi-circular canals, were developed in the physiological laboratory subsequent to the 70's, when the physicists were paying so much attention to the problems of inertia and of mechanics. The theories of the functions of the internal ear must have been seriously affected by the great interest in these physical problems. I believe that our otological history has been colored by that tradition, and that the approach to the facts regarding the vestibular mechanism lies in going over the whole field again, paying attention, first, to a rigid experimental method. A fact is not known until it is experimentally known; it is not experimentally known until the conditions surrounding its appearance have been rigidly controlled and the event itself repeated so many times that the most exhaustive and detailed scrutiny is possible. The clinical method does not admit of this sort of scrutiny. The medical man must learn to love his laboratory and to repeat his experiments *ad nauseam* before he is willing to accept the observations he has made. If we can attack the problems of the clinical laboratory with the same brilliant technique and rigid method as characterized the dis-

covery of the vestibular mechanisms and the working out of its possible mode of operation, we shall have done wisely.

We have started in a small way what must be completed in a large way, and with the utmost co-operation of the clinical laboratory. I take this opportunity to pledge that kind of co-operation; that is to say, literary co-operation, together with a sympathetic survey of facts. Let me ask also for a generous and continuous regard for rigid scientific method; a method that will assure us that any investigator, whomsoever, can repeat all that we do and find under the same conditions all that we have found. Under such conditions the scientific laboratory and the clinical laboratory can make haste in the solution of their common problems.

Holmgren in *Acta Oto-Laryngologica*, Vol. III, Fasc. 1 and 2, gives an excellent description of a mastoiditis occasionally seen—that type in which the air cells have extended into the crest of the zygoma even out to the process. Among the cases quoted are many which had had radical mastoids performed, with the subsequent history of persistence in discharge and continued elevation of temperature. The author found in more than half the temporal bones examined that the cells extend far into the base of the zygoma, occasionally into the squama temporalis or even higher. His recommendations are obvious. D. M.

MAGNESIA MUR. IN FACIAL NEURALGIA*

H. S. WEAVER, M.D.,

Philadelphia, Pa.

THIS very short paper, if I may dignify it by that name, is simply to call attention to one of our remedies that may help some of your suffering patients when the clear-cut indications are found calling for it. I have used the magnesia salts for neuralgias but failed in some to obtain the relief desired and as a result turned to other remedies. I was in the habit of using Mag. phos. or Mag. carb. and when these failed, when I thought them indicated, gave up the magnesias and prescribed other remedies selected according to indications.

When prescribing for these facial pains it is the duty of the physician to ascertain, if possible, the cause of said pain. Many of them are reflex, due to focal infections or from pressure, and it would be just as scientific to prescribe aconite for a fractured femur without applying the necessary mechanical devices for replacing and holding the fragments in position until healing is completed, as to prescribe one of the magnesia salts or any other drug for facial pain and expect results when surgical or mechanical treatment is the only rational treatment to be considered.

I take it for granted that everything pathologic has been corrected and the remaining symptom—pain—is one that should be relieved or cured by the internal administration of drugs.

In some of these cases the cause of pain has been overlooked or has lasted so long that an immediate relief is not obtained, even though the initial cause of pain has been thoroughly removed. It is in these cases that the carefully selected remedy will hasten the cure, and the patient saved from a long convalescent period.

Surgery alone in many of these cases is not sufficient to give your patient the quickest relief; but when combined with the indicated remedy, the patient will have the advantage of your surgical skill and your knowledge of drug action, and by this combination will obtain the most satisfactory results.

*Read at the annual meeting of the O., O. & L. Society, Washington, D. C., June, 1921.

My chief reason for writing this short paper is to report briefly two such cases, to show what can be done with the remedy when care is exercised in the selection of the one best suited to the totality of the symptoms present.

Mrs. C. S. consulted me for the relief of a severe neuralgic pain affecting the left side of the face, particularly the floor of the left nostril and the left malar region. X-ray examination revealed two abscessed teeth with a small amount of necrosis at the root of the upper incisors. Both teeth were extracted and the necrotic area curetted before I saw the patient; but the pain continued. When I first saw her, examination of the sinuses was negative and a second X-ray examination of the remaining teeth revealed nothing abnormal; the bone around the sockets of extracted teeth was healthy, and no cause for the pain could be found. Her pain was described as a deep-seated pain; not sharp, but that constant ache, which made her extremely nervous; could not sit, stand, or lie in bed; compelled her to walk the floor; aggravated by dampness or cold air; driving in motor always precipitated an acute attack of pain.

The above symptoms were present almost constantly for over two months, and the removal of the cause, or I should say the probable cause, the abscessed teeth, gave partial relief; but it was not until she received Mag. mur, 3x, every two hours that permanent relief of pain was obtained. The relief of all pain was so prompt after the use of Mag. mur. that I could not think it was simply coincidental to its use. Nearly two months had elapsed since the teeth were extracted before Mag. mur. was given. Aspirin had been used for temporary relief, and other drugs had been prescribed, but no permanent relief was obtained until Mag. mur. was given. If this were the only case that had improved under this remedy I would hesitate advising its use; but I have seen a number sufficient to warrant a more careful study of the drug.

Mr. J. W., aged 55, consulted me in December, 1914, suffering from the following symptoms: He had had a very severe left-sided facial neuralgia for months, always worse from damp, cold weather. The pain always started from the base of the nose and usually radiated to the left side of the face and left ear. The left nostril was stopped and respiration through the nose at all times was labored, and during the night he was compelled to breathe

through the mouth. Very little or no discharge from the nostrils except when he had acute colds, when it was thin and watery, similar to that found in all patients suffering with acute rhinitis. At no time did the discharge present a pussy character. When a boy he contracted scarlet fever which affected the left ear, followed by a discharge that has continued more or less constantly, with no signs of extensive necrosis present.

Examination of the nose revealed a deflected septum with a large bony spur high up, probably the result of excessive callus thrown out in nature's effort to support a fracture. This spur made pressure on the middle turbinate and to my mind could account for his neuralgia.

The septal spur and middle turbinate were extremely sensitive to touch, and when a cotton-covered probe was used and even slight pressure made to that region it caused neuralgic pains similar to those suffered when exposed to cold or damp winds.

I advised operation, which was gladly accepted, and removed the spur, giving plenty of room between the septum and the turbinate so that no contact or pressure could possibly be had.

The relief obtained from the operation was very prompt and he made a beautiful recovery, having no pain, and cold and dampness were no more objectionable to him than to you or me. Two years later he began having a slight recurrence of this neuralgia, which could be held in check by local treatments and internal medication, but the same sensitiveness to cold, damp weather began to manifest itself. The pains now were not so sharp and neuralgic, and radiated to the right ear. He described them as a deep-seated boring pain that made him restless; compelled him to walk the floor; could not sit still or lie in bed, and always aggravated by cold. Five or ten grains of aspirin would give relief for the time but the attacks came on more frequently. I prescribed Merc. iod. rub., Rhus., Mag. phos., and a number of remedies that I thought indicated, but with very little result, until finally I gave him Mag. mur., 3x, which gave him almost instant relief. One dose quieted the pain quicker than aspirin or any of the narcotic drugs that he usually took for relief.

Mag. mur., 3x, was continued every three hours for a few weeks, and now he rarely has any of the pain except from long motor trips when he is exposed to the cold. He had discontinued

the use of his automobile because of the suffering he always experienced following his motor trips. He is now playing golf in all kinds of weather, and should he have any signs of the old pain one dose of Mag. mur. will give him almost immediate relief.

Mag. mur. should be one of the remedies thought of in all our neuralgic pains in the face, especially when they lack that sharp lightning-like character that always make us think of Mag. phos. or Mag. carb; they are severe dull aching, more or less constant, always aggravated by cold, damp weather, or cold air, or even from the slightest draughts. The pains are so constant that they make the patient restless; nervous; can not sit still; can't lie down; must walk the floor; and are relieved by heat, by pressure and by wrapping up the head.

When the above group symptoms are found Mag. mur. many times will give relief quicker than the usual palliative drugs presented for the relief of pain.

DISCUSSION

CHARLES H. HUBBARD, Chester, Pa.: Dr. Weaver is known to be a careful homœopathic prescriber. When he has anything to say about remedies we are inclined to listen.

I find Mag. mur. especially indicated when the ganglionic nervous system is involved. You have the anxiety and restlessness of aconite, but you do not have the fever and other symptoms of aconite. It is well not to forget that it has relief from heat and firm pressure. We often think of spigelia and prunus in left-sided neuralgia of the face, and many times Mag. mur., particularly when the symptoms above indicated occur, is the better remedy.

H. D. SCHENCK, Brooklyn, N. Y.: I am very glad to hear from Dr. Hubbard about Mag. mur. because I have failed many times when I had thought of Mag. phos. But I realized, when prescribing, my mistake; because I had the dull pain instead of the sharp pain of Mag. phos.

DR. WEAVER: I was led to prescribe Mag. mur. after an exhaustive study of a case that I was asked to prescribe for by one of our physicians, who was rather a skeptic on medicines. I had to prove to him that there was something in our materia medica.

That was a case which I should have cited, because it was very

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interesting. It was a case of diabetes in one of our prominent lawyers of Philadelphia, who had a great deal of facial neuralgia. He had as high as 6 per cent. of sugar in his urine. He had pyorrhea, with a great deal of soreness around the teeth, and developed one of those severe facial neuralgias. It made me think, as soon as he came in, that it was a Mag. phos. case. I gave that, but that night I looked the thing up and made a careful study of his symptoms, and found out that it was not Mag. phos., but Mag. mur. He came back the next day with very little improvement under Mag. phos. He had a deep-seated, boring pain. He could not lie down, and could not sit up. It was a continual ache that made him extremely restless. In looking up Mag. mur. I found it fitted so exactly that now, in all these cases that lack the sharp symptoms of Mag. carb. and Mag. phos., I give Mag. mur. The Mag. carb. cases have that lightning pain, but they are just as restless as the Mag. mur. cases. You are as apt to have the gastric disturbances that you find under Mag. phos. These are not so marked as under Mag. mur. My main differentiation to the symptom of pain is that it lacks sharpness, but is a dull ache that gives as much suffering.

The man came back on the second day. I prescribed Mag. mur., and in twenty-four hours he was much better, and under the administration of Mag. mur. 3x his facial neuralgia gradually improved so that by the end of a week the neuralgic symptoms had cleared up.

Schaeffer sounds a note of warning in his article on ABERRANT VESSELS IN SURGERY OF THE PALATINE AND PHARYNGEAL TONSILS. "In addition to painstaking inspection careful palpation of the tonsillar field should be practiced in all cases preliminary to tonsillectomy, in order to judge the nearness of large or aberrant vessels. The commonest variation is in the appearance of the internal carotid in the wall of the oral pharynx; it is often tortuous and redundant, lying immediately under the superior constrictor." —*J. A. M. A.*, Vol. 27, No. 1, 1921. D. M.

MICROTIA, WITH A REPORT OF A CASE*

E. S. HALLINGER, M.D.,

Haddon Heights, N. J.

MICROTIA, as its name implies, means a small external ear; macrotia, the opposite condition. The title of this paper, as applied to the case about to be reported, is misleading, unless we apply it to the anomalous appendage to be described, which simulates in appearance a small external ear.

The patient, when first examined, was twenty-eight days old. Parents, natives of Poland. Family history unobtainable. Mother well-nourished and of robust appearance, who claims to have always had good health, although she presented typical Hutchinson teeth. Patient, male, is her firstborn, and was brought to the clinic of the West Jersey Homœopathic Hospital because of a discharge from both ears which had been present since birth, or for twenty-eight days.

Examination revealed, in addition to the atypical external ear-conditions to be described, a large indurated mass, the size of a large hen's egg, occupying the right submaxillary region. The mass was immovable and did not appear to cause pain on pressure. Mother stated that the "swelling" had been present since birth and had not changed in size. The child holds its head towards the right, or affected side. A radiograph shows that the mass, probably glandular or lymphatic, had undergone calcareous degeneration. The abnormal concha and appendages are found on the left side, although a few wart-like growths are on the right side. Examination shows the following:

Helix, normal; antihelix, normal; antitragus, normal, or slightly smaller than normal; tragus, absent; also crus helicis absent. The incisura intertragica is double or triple in size to that of the normal, continuing downward and forward for one-half of an inch, to a depression in front of a mass one-fourth the size of the entire external ear; in appearance it closely simulates a complete miniature concha, having a well-defined elevated margin com-

*Read at the meeting of the O., O. & L. Society, Washington, D. C., June, 1921.



DR. HALLINGER'S CASE.

MICROTIA, WITH A REPORT OF A CASE

parable with a normal miniature helix, and a depression in the center corresponding with the external auditory meatus of a normal ear; but there is no opening present in the depression. Anterior to, and in front of the crus helicis, is a small wart-like growth, while in front of the supernumary mass is a very much smaller cartilaginous growth. These wart-like growths are present on the opposite side and are found in the auriculo-oral line.

Both external canals are very small, in fact, the smallest speculum could not be entered into the external canals, therefore, a view of the membrana tympana was not obtained. The secretion present was odorless, white in color and moderately thick or creamy in consistency and was easily wiped away. Bacteriological and microscopical examination not obtained, specimen being lost; and, owing to failure of patient to return, was unable to secure additional specimen.

In true microtia, the concha is usually rudimentary, owing to a defective development of the auricular cartilage, and we find, as a rule, an atresia of the external canals, which may either be complete or partial.

Alexander states that the cause of microtia is due to an arrested development, due to circumscribed adhesions of the amnion to the cranial epidermis in the auricular region, which occurs as early as the fourth to the eighth embryonal week. At this period the free fold of the ear normally develops from fusion of the posterior and superior auricular prominences, while in cases of malformation the fold is either not developed or it is convoluted forward and downward, instead of spreading backward and upward. Congenital appendages in the auricular region are not very rare, particularly in the parotid region and auriculo-oral line, while appendages at the free parts of the ear itself are less common, these being usually bilateral, as in this case.

Bacon says that malformations may exist alone or be associated with malformations of other organs, such as the want of development of an eye or side of face on the same side, also there may be excessive development of the auricle or of the two auricles—polyotia, or so-called auricular appendages.

According to Cassello, excessive development is usually limited to the auricle itself, while want of development is apt to occur with a defect of development of the external meatus and tympanum, less

frequently with defect of the internal ear. There may be entire absence of the auricle; malformations or absence of the different portions of the ear, such as lobule, helix and anti-helix. Imperfect development, termed microtia, is more frequently seen. The auricle is generally out of place and may resemble a cat's ear, the lobule at times being adherent to the skin. Congenital deformities are, according to Virchow, due to early disturbances in the closure of the bronchial cleft, and are often associated with cleft palate and other forms of arrested development in the facial bones. Schwalbe reported that he had a case where the mother had rachitis, in which there were three auricular appendages on the left side, the right being normal: one being found immediately in front of the lobe, one in front of the upper part of the tragus and one about 1 cm. to the side of the angle of the mouth, the auditory canal of affected side being very narrow.

Dench classifies malformations of the external ear as follows:

1. Deformities of particular parts of the auricle; the external ear as a whole maintaining its general outline.
2. An anomalous shape or malposition of the entire auricle, including variations in the size or in the manner of attachment to the skull.
3. The presence of some anomalous anatomical condition, such as certain supernumary appendages, fistulae, etc., in the region of the ear, the auricle being present either in its normal form or more or less altered in shape.

In conclusion, Dench further states that any malformation of the external ear at birth has for a long time been considered somewhat indicative of the presence of some corresponding mental impairment, and that mental weakness, defects or perversions often accompany such anomalous anatomical conditions. That these two conditions always occur together is by no means true.

DISCUSSION

JAMES A. CAMPBELL, St. Louis, Mo.: In discussing Dr. Hallinger's paper on "Microtia," I would like to present a case that I reported before the American Ophthalmological and Otological Society at Indianapolis, June 14, 1882.

MICROTIA, WITH A REPORT OF A CASE

REPORT OF CASE

Although generally so uniform, Nature often plays strange freaks. No organ is more varied in its development than the external ear, but it is only positive malformation that is serious enough to attract much attention. Schwartze, in his "Pathological Anatomy of the Ear," gives us a very excellent resumé of the bibliography of this subject; and odd cases occur here and there, and have been admirably described and discussed. But such cases may properly be considered as not common enough to be uninteresting; in fact Knapp* says, in reporting such a case recently, that rudimentary development with bony closure of the external meatus on both sides is very rare, he having seen but one such case in his own practice. I desire to add to the list a case under the heading above given.

CASE—Carl B., age 20. Right ear. Attached to the side of the head, at about the usual location of the ear, was what resembled the thickened rim of the helix, perpendicularly attached, about one inch and a half in length, immediately in front of the superior part of which was a small depression or cupping of the integument, which was the faintest suggestion of the opening to a meatus.

The left ear was more nearly normal in its appearance, except in the anterior middle region. Occupying the space of what should be the concha, was a thickened backward prolongation of the helix, both behind and in front of which a deep cup-shaped depression appeared; but no opening through the integument existed. In front of the anterior central part of the ear, a little above where the tragus should have been, was a tit-like growth about half an inch long and a quarter of an inch thick.

The patient could hear very loud conversation, and hoping that it might be improved very much by an operation, he appealed to me for that purpose.

Examination showed that he could hear a loud voice at a distance of a few feet. A watch could be heard when pressed upon the right ear, but not on the left side. Politzer's acumeter was heard *in contiguum* on both sides. The vibrating tuning-fork was clearly heard when the handle was placed on any part of the head, but better on the right side. By placing the otoscope at the point

*Archives Otology, vol. x, 2—p. 119.



DR. JAMES A. CAMPBELL'S CASE

where the external meatus should be on the right side, passing the Eustachian catheter and inflating, a full, clear sound could be distinguished, though it seemed far off. In the left ear no sound could be heard, or at least I could not accept the sound as tympanic. The dentaphone gave a very perceptible improvement in the hearing. The patient had a large, angular, unsymmetrical head, the right side being larger than the left.

Virchow, in his investigations of the subject, concludes that congenital anomalies of the external ear and vicinity are to be referred to early disturbance in the closure of the first branchial cleft. These views have been generally accepted by the majority of those who have investigated and presented similar cases. This view, that the anomaly is the result of arrested embryonic development in the region above stated, is borne out by the fact that *post mortem* examination has shown that congenital malformations of the external ear are usually associated with modified or imperfect development of all the rest of the auditory apparatus taking origin in the region of the first branchial arch. This position is well sustained by S. Moos and H. Steinbrügge, of Heidelberg, in a critical examination of a case, and a general review of the subject, which they present in the Archives of Otology, vol. x., 1—p. 54, entitled, "Anatomo-Pathological Conditions in a Case of Malformation of the Right Ear." When we consider this case; the dissections of Prof. Jæger, of Erlangen; that of S. Moos in the Archives of Ophthalmology and Otology, vol. ii., 1—p. 139; as well as a number of other similar cases, it would seem that we can, with much reason, accept the conclusions of Gruber, that "A high grade of deformity in the external ear is never found with a normal auditory canal," and, therefore, with Moos, in the first-mentioned article, that "The alterations described support the view that such cases should be looked upon as a *noli me tangere* in respect to operations."

With such and other testimony before me, and being unaware of a single reported case, where improvement followed operation, it was with the greatest reluctance that I yielded to the urgent request of the patient to operate. The elongated tit spoken of was a source of much annoyance to him, and was in reality a conspicuous deformity; and inasmuch as that was to be removed, I resolved to under complete cycloplegia, irrespective of the age of the patient." spoken of above, occupying the space where the external meatus

should have been. The operation was made without an anaesthetic. A quadrangular piece, including the tit and extra growth were removed. The dissection was carried down in the direction where the external meatus should have been; but after removing all of the tissue I deemed prudent, no signs of an opening in the bone could be detected, I desisted from carrying it farther. The hemorrhage was considerable; but was easily stayed, except a small vessel at the upper edge of the cut, which it was necessary to ligate. The immediate result of the operation was a marked improvement in the hearing. On the day following the operation the patient could hear conversation in the ordinary tone quite well; and could hear a watch, with a normal range of 10' at 3". The parts healed kindly, and the patient was so pleased with the result that he insisted upon my investigating the depression on the other side. Admiring his pluck and endurance, I gave him the benefit of the doubt, and made an incision down to the bone at the point, but, with a probe, was unable to find the least indication of an opening in the bone.

ABSTRACTS

BILATERAL GLOBULAR DETACHMENT OF THE RETINA IN RENAL RETINITIS.—F. Phinizy Calhoun, Jour. A. M. A., October 15, 1921: A case is reported that was studied in the base hospital at Camp Gordon during the war. The history is that of a patient twenty-one years of age, who had entered the army in 1917. Family history negative. Patient apparently in best of health until December 15, 1918, when he complained of headache. On the night of December 17, 1918, he was admitted to the hospital in coma.

The first urinalysis revealed: Specific gravity 1.015; albumen positive; urea 0.688 gm. to 100 c.c. Microscopically there were present pus, blood, coarse granular and epithelial casts in quantity. December 20th the patient was rational and it was then found that his sight was defective. Dr. Calhoun examined the patient December 21, 1918, and found that he had vision for hand movements only, each eye. Pupils moderately dilated and reacted very sluggishly to light. The fundus of each eye showed an intense neuro-retinal edema, with the outline of the disc completely obscured.

ABSTRACTS

The veins were markedly engorged and tortuous. The arteries were sclerotic, causing venous compression. There were many small, flame-like hemorrhages and exudates in the inner retinal layer.

There were several periods of improvement followed by recession until January 18, 1919, when a flat detachment was detected in the upper part of each retina. Two days later multiple globular detachments were seen in each eye. Complete suppression of the urine occurred February 1st, and he died February 6, 1919.

In closing Dr. Calhoun quotes in part the deductions of Moore obtained from the study of cases in the wards of St. Bartholomew's Hospital, London, which are:

"1. Nephritis in the absence of retinitis is not a cause of detachment.

"2. The liability to detachment is largely proportioned to the severity of the retinal changes.

"3. The occurrence of detachment is not related to the presence or absence of general edema.

"4. The immediate cause of the detachment is an active sub-retinal exudate, probably derived entirely from the retina.

"5. In the event of the recovery of the patient re-attachment occurs with permanent visual and fundus defects."

W. G. S., JR.

SQUINT: WHEN SHALL WE OPERATE?—A. S. Green and L. D. Green, *Jour. A. M. A.*, September 24, 1921: Having discussed the various phases of the subject the following conclusions are reached: "1. Age is the greatest single factor in the non-operative cure of squint. Treatment must be instituted before the age of eight, preferably when the squint first becomes manifest, even in infancy, if necessary. 2. It is of vital importance that the family physician and the public be impressed with the necessity that the child have early attention, and not wait until puberty in the hope that the deformity will be outgrown. Procrastination means probable amblyopia in the deviating eye and operation later, in the vast majority of cases, for cosmetic reasons. 3. Operation should be performed in all cases in which there is no reduction in the squint under complete cycloplegia, irrespective of the age of the patient."

W. G. S., JR.

POST-GRADUATE COURSE IN VIENNA

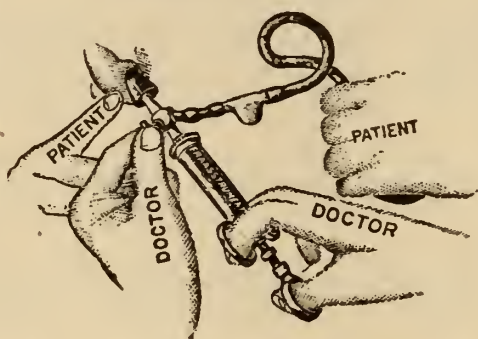
The Editor will conduct a Summer trip to Europe during July and August. About five weeks will be spent in Vienna, Austria, for intensive study of Ophthalmology with the best teachers on the subject. The class is limited. For further particulars consult the Editor.

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
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Editorial

OPEN LETTER FROM THE PRESIDENT OF THE O., O. & L. SOCIETY

THE remarkable methods adopted by the officers and members of the Ophthalmological, Otological and Laryngological Society, during my membership in the organization, stand out so prominently in their far-reaching influence that I urgently desire the continuance of the practice of exchanging freely the results obtained from original efforts and investigation.

The mere mention of "Fusion Faculty," "Bifocal Assistance for Muscular Insufficiency in Children," "Dowling's Tamponades," "Closing Membrani Tympani Perforations," plus the many other clever ideas advanced by the different members, readily exemplifies this habit of co-operation and exchange, and you will note that many of the important features gained at these meetings stand shoulder to shoulder in preeminence with the numerous professional methods practiced in our offices today.

Each year's convention demonstrates to the members that the exchange of ideas is the most practical kind of post-graduate work. This year will be no exception.

Everything is proceeding in fine shape. We are waiting for replies from several of the members. The bureau reports show progress. We desire your early co-operation in answering the letters sent you by the bureau of chairmen.

J. R. McCLEARY.

COMMUNICATION FROM THE PRESIDENT OF
THE A. I. H.

AFTER no inconsiderable amount of correspondence the Executive of the American Institute is made happy by the news that our colleagues of the British Homœopathic Medical Association have delegated Dr. Fergie Woods, of London, to represent their organization and to make the journey from London to the Chicago meeting. Dr. Woods is personally known to the Executive as he had the extreme pleasure of meeting with him at the International Homœopathic Conference at The Hague, held in 1921.

Dr. Woods is to make a contribution in the Bureau of Materia Medica at the Chicago meeting. He has been an intense student of this subject and represents some of the most advanced work done at the London Homœopathic Hospital. This contribution, which is coming some four thousand miles to be presented to you, will be one of the features of our Chicago meeting.

Correspondence is being conducted with the two homœopathic medical colleges in the City of Mexico, and we have the promise that representatives from these advanced institutions will be present at the Chicago meeting. There is published in the City of Mexico a homœopathic magazine which bristles with contributions in pure homœopathy. The presence of our colleagues from further south on the North American continent will lend an international character to the meeting.

The Hahnemannian Homœopaths of our school will be pleased with the contributions which Dr. Stearns, Chairman, has under his Bureau of Materia Medica. Papers will be presented by Dr. Cyrus Boger, of Parkersburg, W. Va., Dr. Benjamin Woodbury, of Boston, Dr. Eugene A. Underhill, of Philadelphia, and Dr. N. D. Marbaker, of Chicago.

In addition to the contributions of particular interest to the Hahnemannian Homœopaths there will be a number which will carry particular appeal to the scientific wing of the school. Among these is a contribution by Dr. I. S. Kleiner, Dean of the New York Homœopathic Medical College, under the title of "Detection of Minute Amounts of Substances by Chemical and Physiological Methods."

EDITORIAL

Affairs of interest to the homœopaths of the North American Continent are taking place so rapidly that it is to the interest of all of us to make every effort to keep abreast of new things. The Chicago meeting of the American Institute will be an intensive one; every minute will be of profit to those in attendance. Be fair to your clientele, Doctor, and make yourself of greater usefulness to them by being present at the meeting of the American Institute of Homœopathy, Hotel Drake, Chicago, Illinois, June 18-23, 1922.

ROY UPHAM, *President*,
American Institute of Homœopathy.

COMMUNICATION FROM THE HOSPITAL INFORMATION BUREAU

FOLLOWING the survey of hospital work in New York City made by the Public Health Committee of the New York Academy of Medicine and the disclosed need of a central agency of information about hospitals, the United Hospital Fund organized such a Bureau with offices at 15 West 43rd Street.

The aims of this Bureau are to keep in touch with hospital work and progress in New York City; to furnish information to all interested with regard to administration, record-keeping and other facts concerning hospital work, organization and facilities; to study and make known the hospital needs of the city; to prepare exhibits; to maintain a library of hospital reports and statistics, also of record forms and blanks used in the several departments of the hospitals; to publish annually, or more often, information concerning hospitals; to promote uniformity in hospital reporting; and, whenever called upon by the hospitals, to assist in such administrative and efficiency studies as would be of value to the hospitals, municipal and private.

The committee in charge of the Bureau are as follows: Mr. Francis Smyth, Chairman, Trustee of the United Hospital Fund; Dr. W. Gilman Thompson, President of the Reconstruction Hospital and Trustee of the New York Academy of Medicine; Dr. S. S. Goldwater, Trustee of the United Hospital Fund; Director of Mt. Sinai Hospital, formerly Commissioner of Health; Mr. Julius

A. Stursberg, Trustee of the United Hospital Fund and also of the Lenox Hill Hospital; Mr. Henry C. Wright, Hospital Consultant and Trustee of Bellevue and Allied Hospitals.

Dr. E. H. Lewinski-Corwin, Executive Secretary of the Public Health Committee of the New York Academy of Medicine, has been appointed Director of the Bureau.

RESPIRATORY SYMPTOMS DUE TO LATENT SYPHILIS

Communication from The Henry Phipps Institute (under date of March 1, 1922)

SYPHILIS, as is well known, may ape any disease. Prior to the discovery of the tubercle bacillus Pulmonary Syphilis was believed to be common. Following Koch's discovery, the reporting of cases of syphilis of the respiratory tract became quite rare. Within the past few years, however, the number of reported instances of this affection are numerous.

The experience at the Henry Phipps Institute has been that individuals presenting symptoms and physical signs due to latent lues cannot be distinguished in the beginning from pulmonary tuberculosis. They complain of cough, expectoration, blood-streaked sputum or small hemoptyses, loss of weight, and, as a rule, have a slight elevation of temperature.

The physical findings may indicate mischief at the roots of the lungs, the bases or the apices. In some instances, the physical findings are practically negative. It is obvious such a combination of symptoms and physical findings usually leads to a diagnosis of tuberculosis.

Syphilis is to be suspected as the cause of the trouble: (1) If the sputum is persistently negative for tubercle bacilli; (2) if stigmata of syphilis are found (history of miscarriages, nocturnal headaches, tenderness over the sternum, enlargement of inner end of clavicle, atrophy and induration of testicle, etc.); (3) if the Wassermann reaction is strongly positive; (4) if there is an amelioration of the symptom following anti-syphilitic treatment.

This rests on the exclusion of tuberculosis or other less common, chronic pulmonary infections, and the demonstration of a

EDITORIAL

positive Wassermann reaction or the presence of syphilitic stigmata. As a rule, the relief of the symptoms and the restoration of health is striking following antiluetic treatment. It is to be borne in mind that instances of a double infection are numerous. In such cases treatment of the lues is as essential as when it occurs alone.

When you have a case suffering from obscure pulmonary trouble, the Institute will be glad to furnish you aid in the study of the sputum and the Wassermann reaction. If syphilis is the cause, the case can be cared for in the Syphilis Clinic for a small charge. It is held every Tuesday at 6.15 P. M.

CONCERNING THE NEXT O., O. & L. MEETING

ABSTRACT from a recent letter from Dr. Burton Haseltine to Dr. J. R. McCleary: "Reporting on your request for an eye clinic I have been extremely fortunate in being able to arrange with Dr. George F. Suker for a clinic on 'Medical Ophthalmoscopy,' for the afternoon of June 20th. Dr. Suker, as you know, is perhaps the greatest authority in this country on fundus cases, and with the material available at Cook County Hospital he will be able to give us a clinic of the greatest possible interest. This will provide beautifully for your exclusive eye men and being on the same afternoon will give a chance to those who are interested in both the eye and nose and throat work."

AN ABSTRACT OF THE YEAR IN GLAUCOMA TREATMENT

THE year's literature reveals a great diversity of treatment in the glaucomas, with varying degrees of success claimed by the investigators. Among the more thoroughly probed methods, we may consider the use of the myotics, eserine and pilocarpin, adrenalin, calcium chlorid, iodine, the electric thermophore, Roentgen rays, and the operative procedures, Elliot's scleral trephine, the Lagrange simple or combined iridectomy, iridectomy, and cyclodialysis.

Köllner makes known his experiments on the influence of vaso-constriction on pressure, namely, the comparison of the effects of subconjunctival injections of adrenalin and the instillation of eserine. The injection of adrenalin 1/20000, 4 cm, resulted in extreme pupillary dilatation and a drop in intraocular pressure from 70 mm. to 45 mm. with a return to 70 mm. after two days. The instillation of eserine 1/2 per cent. caused a drop in pressure from 70 mm. to 27 mm. lasting three and a half days with, of course, the typical contraction of the pupil.

By plotting curves, representing the contraction of the pupil and the fall of pressure, he demonstrated that in glaucoma simplex, there was a direct relation between these two reactions following the use of pilocarpin and eserine. Following the immediate contraction of the pupil, by varying lengths of time up to two hours, there was an initial rise in pressure followed by an abrupt fall. A definite relation existed in the duration of the contraction and the decrease in pressure, both slowly returning to the original condition after a period of 24 hours to 2 1/2 or 3 days, usually the latter. The effect of pilocarpin was of shorter duration than that of eserine. In the inflammatory glaucomas, he found the tension fell before the pupil contracted.

Köllner's deductions bear out the popular belief that *eserine* reduces pressure by its action in contracting the pupil, unfolding the iris and increasing drainage, rather than by its effect upon the vaso-constrictors.

Weekers claims a favorable influence upon some cases of glaucoma, attained by the intramuscular or intravenous injections of *calcium chlorid*, relying upon its controlling action upon transudation and exudation. The results were not at all general, many cases failing to show any effect of the medication upon the intraocular pressure.

Kerry used injection of oily solution of *iodin* 1-40 in several cases, without definite conclusions.

Shahan and Post have demonstrated that intraocular tension may be reduced by the application of heat by means of the *electric thermaphore*. The cases of simple glaucoma so treated showed a decreased tension lasting for a number of months. A return of the tension responded to further application of the thermaphore. They withhold the presentation of this method in preference to the usual

medicinal procedures, pending a perfection of technique and the accumulation of more experimental evidence.

Hessberg tried *Roentgen rays* in cases of haemorrhagic glaucoma, in which the affected eyes were practically blind. In four out of five cases the haemorrhage and pain completely and permanently subsided, and the tension was diminished. He advances this method of retaining natural though blind eyes without pain or danger.

In the operative field nothing new has been presented for the cure or inhibition of glaucoma. Most of the writing has resolved itself into a discussion of the advantages and disadvantages of the Elliot trephine in preference to iridectomy, cyclodialysis, or sclerectomy.

Lieberman holds a strong brief for the *Elliot trephine*, when he states that he saw no late infections in two hundred cases trephined. He urges it in cases where iridectomy is not suitable because the iris angle is so obliterated that iridectomy cannot be expected to free it or an attempt has failed.

Weeks expresses his indications for sclerocorneal trephine, when he says that such an operation should be selected as soon as the lymph spaces at the filtration angle and in iris tissue, are permanently closed to the extent that removal of iris tissue cannot restore a normal balance between the inflow and outflow of intra-ocular fluids. He admits the difficulty in recognizing this period, but prefers to err on the side of early operation to establish a filtration cicatrix. According to all enthusiasts in the Elliot or Lagrange operations, the value lies in the resulting filtering cicatrix; yet, Hamberger, in his article on "The Mechanics of Glaucoma and Its Operation," holds that the mechanical explanation of cures wrought by filtering cicatrices is untenable, for cicatrices are not more but less permeable than physiological tissue. Also Colombo, after an interesting series of experiments, found in later microscopic examination of trephined rabbit's eyes, that in practically all cases, the ciliary body had been dragged forward and was implicated in the scar, though no evidence was apparent clinically and hence declares that a so-called filtering cicatrix does not occur in the absence of uveal tissue.

But to return to those who see a great advantage in the Elliot trephine, and there are many, Hambresin reports 55 per cent. cures

in simple glaucoma, and six out of seven cases cured in chronic inflammatory glaucoma. Hegner unqualifiedly declares it superior to other intervention and apparently does not consider it contra-indicated in the acute inflammatory type of glaucoma.

Butler returns to the trephine method in simple and chronic inflammatory glaucomas and his indications for operation are: Tension above 40 mm., menaced fixation point, either by contraction of the peripheral field or Bjerrum scotoma.

The majority of writers on this method, prefer the 1.5 mm. or 2 mm. trephine. Many operators have abandoned the sclero-corneal trephine as containing too great an element of late infection, yet as Lieberman says, material from different operators cannot be compared justly, as not all operators are equally skillful in this operation.

Cyclodialysis has many supporters. Cremer considers cyclodialysis as the strictly indicated method in all stages of compensated glaucoma and presents eleven cases to substantiate his claim for satisfactory results.

Schürhoff gives an impressive list of 437 operations for glaucoma. In this list, trephine and iridosclerectomy do not receive proper consideration as they were abandoned after two unsuccessful operations, but cyclodialysis was given a most extensive trial (259 cases) and Schürhoff shows it to have succeeded where iridectomy failed, while when cyclodialysis failed, iridectomy was equally ineffective. He would rarely, however, choose it in acute glaucoma.

Salus is most exact and methodical in his indications for various operations: Acute glaucoma in relapses, iridectomy; acute glaucoma between attacks, cyclodialysis; compensated glaucoma, cyclodialysis; hydrophthalmus, trephining; haemorrhagic glaucoma, cyclodialysis, in case of failure, trephining. His indications for operations of any sort are based upon vision, visual field, color perception, and light sense, rather than the tonometer readings, though he considers the tonometer a most valuable instrument.

Many still adhere to the *iridectomy* as the safe and sane treatment especially in acute cases. Koster favors iridectomy and offers a report of 77 per cent. of cases improved by this method. Santos Fernandez, after using various methods of operating, has discarded all others in favor of iridectomy.

Gilbert retains his faith in iridectomy, although he prefers to

EDITORIAL

avoid operation in cases of glaucoma simplex over sixty years of age. He operates under sixty because the high pressure will have longer to act and will cause more degenerative changes.

Lagrange has written explicitly as to the zone of election in performing his operation, and is not alone in his defence of his teaching and methods.

In summary, the year's discussion has sought in the main, to establish the relative feasibility of the operations already in vogue, after a careful consideration of their advantages and their dangers. In the first place, are they efficacious, and then, of those that are efficacious, which is attended by the least element of disaster. Undoubtedly, every oculist is influenced by written articles in choosing the methods to explore, but, after all, it is the result of his own investigation tempered by his particular skill, which will eventually rule his selection of operation. G. E. G. N.

NOTE

In the discussion and report of case by Dr. James A. Campbell in connection with the article on "Microtia," by Dr. E. S. Hallinger, that appeared in the March issue of the JOURNAL, the attention of our readers is directed to a typographical error on page 111, third paragraph, seventh line. The complete phrase should read, "I resolved to include in the operation the backward prolongation of the helix spoken of above." In justice to Dr. Campbell we are glad to make this explanation.

BASILAR TUMORS AFFECTING THE VISUAL FIELDS— TWO RARE CASES*

S. B. MOON, M.D.,

Pittsburgh, Pa.

IN presenting a report of these cases of hemianopsia the writer thought it well to review briefly some points of interest pertaining to intracranial tumors in general; therefore, the introductory remarks consist of abstracts of the most recent literature obtainable on this subject. For clinical purposes all expanding lesions situated within the skull must be regarded as tumors because each constitutes an alien mass within a rigid, almost inexpandible box already adequately filled with nervous tissue, cerebrospinal fluid and brain membranes. Such masses, no doubt, behave somewhat differently according to their different cellular constructions, but it is manifestly true that while it is most often possible, and frequently easy, to name the site of a foreign body growing within the cranium, speculation regarding its nature is usually little more than a hazardous guess.

We know that the cerebellum and the pons are affected most frequently by tubercle in young persons, that gliomas develop more rapidly than do endotheliomas, so do many other symptoms indicate certain types of tumors which appear by no means as frequently in the autopsy room as they have been diagnosed. It is estimated that about 2 per cent. of the autopsies show the presence of brain tumors.

The pathogenesis of tumor formation in the brain is as obscure as that governing such phenomena in other parts of the organism. The granulomata occasioned by syphilis, tubercle and fungi-like actinomycosis, are probably lymphogenous infections. The mode of production of cysts in the fourth ventricles by cysticercus cellulosæ is sufficiently clear, as is that of the metastases from other organs, but the processes determining the production of gliomata, endotheliomata, and sarcomata are as yet undetermined, though dermoid tumors, teratomata and chondromata occur as a result of embryonic defect and are usually basal in position. Antecedent skull

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BASILAR TUMORS AFFECTING THE VISUAL FIELDS

injury is very much questioned as a cause of brain tumor, except where there is already a very vascular and loosely cellular glioma that has not yet caused any symptoms. Probably one-half of all brain tumors are gliomata, growths of ectodermal origin. A few of these tumors undergo cystic degeneration and any attempt to dissect them out is followed by disastrous hemorrhage, while on the other hand endotheliomata may be removed quite successfully, and this probably accounts for the success in recent surgical therapy.

So far as we are concerned we are interested mostly in the disturbance of vision, and the particular type of visual disturbance is hemianopsia. For the purpose of locating the lesion and for clinical and anatomical reasons it is best to divide the optic organ into the following component parts: The optic nerve (blindness in the respective eye); the chiasm (bitemporal hemianopsia, binasal hemianopsia, loss of light perception in one eye and a temporal hemianopsia in the other); the optic tracts (homonymous hemianopsia); the primary optic centers (the external geniculate body, corpora quadrigemina, and the pulvinar or optic thalamus) (anopsias with pupillary disturbances); and the radiating fibers and cuneous (by association of an involvement of the neighboring nerve centers).

Edward B. Towne divides pituitary tumors into two groups: (i) *pituitary*,—(a) adenomatous struma (epithelial); (b) embryonic or “rest tumor” (epithelial or mixed); and (ii) *the non-pituitary*,—(a) dural endothelioma; (b) tubercle; (c) gumma, (d) osteosarcoma; (e) glioma, and (f) metastatic carcinoma.

Symptoms due to the pituitary tumor are general and local pressure symptoms. Manifestations of disturbed pituitary function are: (1) Results attributed to increased or perverted secretion of the anterior lobe (skeletal), cutaneous, sub-cutaneous and visceral changes; (2) Results attributed to increased secretion of the posterior lobe (glycosuria); (3) Results attributed to diminished secretion of the anterior lobe (skeletal and cutaneous changes, sexual infantilism or retrogression); (4) Results attributed to diminished secretion of the posterior lobe (increased tolerance for carbo-hydrates, adiposity, drowsiness, asthenia, lowered body temperature, epilepsy, arterial hypotension and polyuria). The local and pressure symptoms are headache, hemianopsias, ocular palsies, optic atrophy, choked disk and lowered visual acuity that comes on gradually and is rarely improved by glasses. The

treatment consists of thyroid and pituitary extracts, mercury and iodine may have a good effect even in non-luetic cases. The X-ray has been effective in a few cases, but should not be used if surgical intervention is likely to follow. Benedict says the decision on operation should properly rest on the changes in the field and the appearance of the optic disks, since the indications of operation disappear with the development of optic atrophy that makes restoration of visual function impossible.

When the tumor is intra-sellar, the sub-sellar decompression is the operation of choice and when supra-sellar, the intracranial operation should be selected.

Mr. G. E. K. Age 60 years. Labor foreman. For two months has lost his vision in the temporal fields, and when lying down has synchysis scintillans. The vision in the right eye is twenty-fiftieths, but he can only see the first letter on each line. In the left eye it is twenty-seventieths, and he can only see the last letter of each line. No glass will improve his distance or near vision. The perimeter shows an entire loss of vision in the temporal fields and a marked contraction of the nasal fields. In the left eye there was a scotoma in the seeing area of the nasal field; however, this was only temporary. The blind fields extended to the vertical line which was almost straight and in axis ninety. The fundus was normal as well as the pupillary reflexes. The systolic blood pressure was one hundred and thirty, urine analysis negative, Wassermann negative. The radiograph of the teeth showed the presence of a retained root in the left upper central incisor, a radiolucent area about the roots of the first and second left lower molars, suggestive of granulomae. The radiograph of the head shows a shallow sella tursica with a broad base and a wide separation of the anterior and posterior clinoid processes, indicating that the tumor was intra-sellar.

A sub-sellar decompression was decided upon and the first attempt to perform this operation had to be given up on account of severe nasal hemorrhage, which continued for three or four days. About a week later a second attempt was made, which proved to be a hemorrhagic one also. After the patient recovered from the anesthesia, one half of the body was paralyzed and one side of the face. The patient did not recover consciousness, and died in two or three days of cerebral hemorrhage. A permission for post-mortem could not be obtained, but the surgical experience would

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indicate the presence of an angioma or an aneurism, while on the other hand the rapidity of the growth would indicate glioma—at any rate the nature of the tumor remains obscure.

This patient never had any other symptoms of pituitary disease, unless it was a slight headache upon two or three occasions.

The following tests that are of value in diagnosing intracranial tumors were not made—the provocative and spinal Wassermann, the sugar tolerance, the basic metabolism and the auscultation of the cranium. This latter test might have been of some value if the tumor was an aneurism.

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BASILAR TUMORS—A CASE*

I. D. METZGER, M.D.,

Pittsburgh, Pa.

IN any effort at diagnosis, symptoms should be given their due value. They are the indices, the clues, if you please, which direct the quisitor toward the morbid process. Following these cautiously one quickly may detect the sign-boards which point the way even more definitely until the etiology of the disease is eventually revealed. The symptoms indicating some alterations in vision are apt to be uncertain and often considerably involved. Unless there be a sudden and pronounced change in the accustomed vision, the patient is apt to be hazy in his history of the same. Vision is purely relative, both in comparison with others and with one's former acuity, and, unless it be determined by definite criteria the comparisons are valueless. So frequently we find people who are conscious of some vague unusual condition about their eyes, and

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uncertain lack of general well-being, an inability to perform comfortably their accustomed routine in life, and they seek aid in determining their incomprehensible distress. Then the diagnostician needs to take the clues, discern the signs and ascertain the facts of the case.

My predecessor has set for you the basis for the determination of some obscure cerebral conditions which mean life or death to the unfortunate patient, and it is my pleasant duty to attempt to illustrate by a single case.

Mrs. A. E. F. was rather an unusual woman; she was a minister's wife, 45 years of age, a university graduate with a keen, cultured mind which was capable of leadership and which was reflective and productive in literary lines. Her early days were spent actively in the country about her father's Jersey farm, showing nothing significant as to her subsequent history excepting the fact, as later recalled, that she had fallen from a load of hay striking the ground head-first. As later remembered by her and her family, she was somewhat dazed at the time but soon recovered, and remained normal, without the care of a physician. After her marriage to the reverend doctor she became a capable and rather critical housewife. She gave birth to one child, a son, who was about fifteen at the time of the serious development of her illness. One of the first indications of persistent ill-health was the fact, as noticed by both the son and father, that she became indifferent to her home, her family and her church friends, and seemed to lose the mental keenness which was one of her characteristics. Her slowness of mentality worried her as well as them; she knew what she wanted to say or do, but found great difficulty in forcing herself to respond.

In the course of some months, this minister's wife began to get headaches, accompanied by nausea, which were worse at night, and she noticed some annoyance in seeing. She consulted an oculist who prescribed glasses for her. These seemed to give little relief. During the next few months she consulted several oculists, the last of whom, a few weeks before the writer saw her, diagnosed her condition as that of choked-disc and explained to her husband that her condition was very serious, but that she needed a general physician and not an oculist. Permit me to interject, this matter of shunting cases from physician to specialist, and vice-versa, without

attempting to do team work is hazardous if not disastrous, to both patient and physician. In medicine, as in any complex social system, the success of any is dependent upon the co-operation of all, and the eminent one is he who calls to his aid the expert knowledge of his confreres and adapts it to the case at hand. The suave demeanor and the fascinating erudition of one's consultant may appear at the time to discount his own professional stock, but unselfish efforts at aiding one's patient will linger long after the skirmish has passed and one remains as the safe, reliable physician of the household.

The writer's record shows that Mrs. A. E. F. consulted him first on January 18, 1915. At this time the following history and physical findings were obtained: Family history—She had two sisters and one brother. The latter disappeared mysteriously in Philadelphia when twenty-one years of age and was never found again. She was then fourteen years old. Aside from an attack of typhoid fever when about fifteen years of age and the fall from a wagon previously referred to she was quite healthy. During the last fifteen years she had been having hemorrhoids, which at times bled profusely.

Present Illness.—For several years she has been gradually losing her mental alertness and now is quite apathetic. Six months ago she developed vertigo, which put her to bed almost continuously for two months. This gradually disappeared and violent headaches followed. These were spasmodic, of two or three days' duration and occasioned bilious vomiting. The headaches seemed to involve the whole head and were not relieved by vomiting. The vomiting had no relation to food, more or less projectile in type, with slight nausea. Three months before consulting the writer, she noticed some failure in vision which caused her to consult the several oculists and nerve specialists previously referred to.

Present Condition.—Vision in each eye 20/60 with no improvement with a plus .75 spherical correction. Fundi showed a marked choked disc of equal intensity in the two eyes. Visual field was lost almost entirely on the left side of each eye, leaving free each macular area. Closer inquiry of the husband elicited the fact that for a year or more it was necessary for him to walk on her left side to keep her from bumping into people or objects on the street.

Further investigation showed her urinary findings and blood count to be non-significant. Examination by a nerve specialist showed nothing new. Pupils were normal and reacted to light and accommodation. The Wassermann test, which was made several times, was absolutely negative. The Wernicke pupillary-arc test showed that there was no pupillary reaction upon throwing light into either eye from the left field, thus showing a break in the arc on the right side. This left-sided hemianopsia indicated a lesion back of the commissure on the right side. The break in the light reflex-arc showed that the lesion must be at or anterior to the external geniculate body of the corpora quadragemini; therefore, the lesion must lie between these anterior and posterior points and involve the right optic tract. Since this tract courses in close proximity to the sella tursica, the conviction became evident that an X-ray picture of the base of the skull might aid us in placing the lesion. This was made February 15, 1915, one month after the first examination, and showed a marked cancellated enlargement of the body of the sphenoid bone which crowded severely upon the posterior clinoid process of the sella, narrowed its opening and compressed the pituitary body. This, to me, accounted largely for her mental apathy and very apparent slowness of comprehension. The heaped-up appearance of the body of the bone appeared not unlike that of mastoid cells and showed a positive outline of the periosteal limit of the bone. This tumor, of course, accounted for all her symptoms—the choked disc with failing vision, the headaches and the vomiting.

The several weeks following this date on which a positive diagnosis was made proved to be very precarious to her life. The headaches with vomiting became more pronounced; heavy hypnotics became necessary and her attending physician despaired of prolonging her life. After about two weeks, however, the headaches subsided, the vomiting ceased, the mentality became more alert so that by the end of two months she was able to make the thirty-mile trip to Pittsburgh for another examination. This showed a marked clearing of the papillitis in each eye and an increase of vision to 20/30 in each eye. The left-sided hemianopsia, however, persisted. Another X-ray picture now showed a flattening out of the sphenoidal tumor, as though crushed as an egg-shell, leaving the sella wide open and relieving the intracranial pressure.

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Improvement in her general condition continued so that she was able to spend her vacation near Philadelphia and consult several specialists in said city. Dr. G. W. Mackenzie and Dr. J. W. Frank, of this city, confirmed the diagnosis by physical and X-ray examinations. X-ray examinations were made at about six month intervals for several years. The record of July 21, 1916, shows that the patient had gained about thirty-five pounds in weight, now weighing one hundred and thirty-five pounds, and being heavier than ever. The vision had increased to 20/25 in each eye, and the fundus showed slight atrophy subsequent to the choked discs. The left-sided field remained entirely dark. The last X-ray plate taken, in May, 1918, indicated an increase of swelling in the body of the sphenoid bone posterior to the former one and approximating the foramen magnum. Her general condition was not quite so good and it proved to be the onset of a gradually fatal debility. The minister decided to accept a charge at Newburgh-on-the-Hudson and moved there in the fall of 1918. His wife remained at her mother's home near Norristown, Pa., for about six months under the care of Dr. E. A. Krusen. He reports that the decline in her vitality was slow but persistent. In the spring of 1919, she developed a progressive paralysis which involved in order, her left leg, left arm, then right leg and right arm. Her mind remained good to the last. After some months she died from general debility, her sight having continued unchanged during the last four years of her life.

Here we have had a tumor in an unusual location which was slow in development, inoperable and apparently hopeless as to life. However, her life was extended at least four years beyond reasonable expectation. Dr. J. C. Macauley, her general physician, gave her material doses of potassium iodide for a short time, and found it to be intolerable. He then gave her sodium iodide in similar doses almost constantly throughout her sickness. Knowing the unusual type of trouble and the seriousness of the same, her husband readily agreed to an ultimate autopsy. When she removed to New York State, a letter was given to present to one of our eminent oculists in New York City, but it was never presented, and the case was lost to science in its conclusion. As to the type of tumor, one can merely speculate; as to the diagnostic signs and symptoms, one could scarcely fail in placing the seat of the trouble. By the

aid of the X-ray, one could actually see during life the outline and progress of the growth. As to the treatment, let us not despair too early in the efficacy of our medical armamentarium.

DISCUSSION

WILLIAM H. PHILLIPS, Cleveland: Dr. Moon has given us a very succinct account of basal tumors. He has covered the field so well that it is scarcely worth while to add anything. His case is a straight case of pituitary growth with pathognomonic symptoms. The only thing that appeals to me in the case is the treatment. Operative measures were undoubtedly properly indicated and properly taken up. The outcome, the intracranial hemorrhage, makes me feel that whoever operated met with the same unfortunate mishap with which I met in the first operation of the kind that I did: that is, I opened through an ethmoid cell instead of the sphenoid, and this was followed by uncontrollable hemorrhage and the death of the patient. Dr. Metzger's case, however, is a much more complicated one. He has not stated his opinion definitely as to its location, nor as to its nature. He probably felt that he could not, because of the lack of a post-mortem. The case, to my mind, was not an intrasellar pituitary tumor. In these conditions, we do not have symptoms so pronounced in the early stages as those that Dr. Metzger gave us. In the second place homonymous hemianopsia is not characteristic of an intrasellar growth, although it may be present, nor is the progress of this case characteristic of it. The increase of weight, however, belongs to pituitary disease. Possibly this growth was one developing in a not uncommon region, that is, an inter-peduncular growth of some nature, making pressure upon the sella or upon the pituitary body, and producing hypo-pituitarism. This would readily account for the homonymous hemianopsia, rather than a bitemporal hemianopsia, although we should expect symptoms in the way of eye muscle paralysis, with possibly some facial disturbance, which the doctor has not mentioned as being present. It would be difficult to explain the changes in the bone condition which he has mentioned as being present in the X-ray plates, although destruction of the posterior clinoids is not so uncommon a finding. To me, the history of the case is that of a cyst developing in this region. The sudden remission in the choked disc

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and the neighborhood symptoms could be explained by the rupture of the cyst and relief of pressure.

The question that the doctor makes emphatic is that the tumor was inoperable. There might be a question as to whether it was operable or not. If it were an intrasellar growth, it certainly was not inoperable; if a suprasellar growth, it might or might not have been. Seven years ago I presented seven cases of intrasellar affections before our State Society. One was a case in which a prominent Cleveland diagnostician and I had disagreed as to the location of the disease, and he insisted that it should be operated by the transphenoidal method. The X-ray plate had shown a small closed-in, sharply defined sella. He presented only slight signs of hypo-pituitarism, but had a pronounced bitemporal hemianopsia with the right eye nearly blind, and the left vision 20/70. With this evidence it did not appeal to me that a transphenoidal operation would do anything. The patient suggested that we have more counsel, so we sent him to Cushing. Cushing confirmed my diagnosis, that the tumor was inter-peduncular and performed a trans-frontal operation, removing by a dull spoon a large amount of tumor material. I asked him to give me a laboratory report on the result, but I have not received it. The operation was done five years ago, and he still retains a fair amount of vision in his left eye. He has shown no further changes. There had been no neighborhood symptoms at all; no signs of increased pressure in any way, shape or manner. He is performing his duties as an attorney.

I think that we should be slow in saying that these tumors are inoperable. If a cyst existed, the opening of the cyst would probably have been of temporary benefit, but there are cases on record in which the opening of a cyst has given relief for many years. I question very much whether the sodium iodide had much influence in the treatment of the case.

The doctor has given a clear and accurate report of this case, such as we do not often see. The only question that would arise in my mind is his right to exclude operative measures in a case because it is basal.

RALPH I. LLOYD, Brooklyn: The cases are most interesting to me; and one point that I should like to bring out is that in tumors of the brain, the general conception of changes in the visual fields is wrong. This is proved by the statistics of Cushing and

other great brain surgeons. In 43 per cent. of pituitary cases the characteristic field is one blind eye with half a field left in the other. In 32 per cent. the classical bi-temporal loss is present. This is the type that we all look for as being the most common—bitemporal hemianopsia; but it is not the most common. Homonymous hemianopsia is present in 17 per cent. of cases, and in the rest there is no effect upon the eye fields at all. These are the statistics of Cushing and Walker. Therefore, we ought to go a little slowly about concluding from the field proposition just where the tumor may be, or whether it is or is not pituitary.

There is still another proposition that enters into these brain cases. All brain tumors may present hemianopsia sooner or later, because of pressure on the chiasm, resulting from internal hydrocephalus. If you take a section of the brain at the chiasm, the relation of the third ventricle is plainly seen, and the reason why pressure from distension of the third ventricle can affect the chiasm is apparent. Here is the secret of the difficulty of using fields and choked disc as a sign of tumors of the brain, no matter where they may be; because it is a clinical fact that a tumor in the parietal cortex, if it is big enough, does the same thing eventually as a cerebellar tumor: enlarges the third ventricle and produces pressure on the chiasm, which will do the same thing as an enlarged pituitary pressure from below. We should look on choked disc as a sign of secondary hydrocephalus, due to tumor somewhere. The literature of brain tumors is full of such cases. You can get a case of parietal tumor up high, with choked disc late, and a small tumor in the cerebellum, producing it early. It is merely a question of how soon the internal hydrocephalus will develop.

Mention has been made of the fact that these tumors are rare; 9 per cent. of all brain tumors are pituitary.

In regard to choked disc Dr. Metzger's case is unusual if pituitary, according to those who have handled a great many of them. Choked discs are rare in pituitary cases. Mention was made of the fact that the fields of vision did not return. The records of surgeons who operate on these cases show that if the pressure on the chiasm has not lasted longer than six months, a great deal of vision will return.

I have a little different theory from that of Dr. Phillips regarding the case of Dr. Metzger. It is my guess that it was a tumor

that broke through the diaphragma sellae. As shown in the autopsy table there are cases that have broken through. The pressure is beneath; and if it breaks through, it will usually favor one side or the other. Most of the pressure then is on the tract back of the chiasm, and that gives the homonymous hemianopsia. Statistics show that these are the most unfavorable cases to handle, because the growth has early broken through and wandered high up into the Locus Perforatus Anterior of Sylvian Fissure. Some of the gross sections of brain and similar cases that have been operated, and given temporary relief show a condition that is astonishing regarding area involved and the size of the tumor at the base of the skull.

I am glad that these gentlemen had these cases, rather than myself. I have had some of them, and the responsibility is great, and the patient and friends naturally anxious and impatient.

GEORGE A. SUFFA, Boston: I should like to ask a question regarding the statement concerning the metastasis of the tumor: Whether a metastatic tumor could only be a sarcoma?

DR. PHILLIPS: It could be any other type of tumor, but it was a sarcoma.

DR. LLOYD: I should like to ask Dr. Moon how he made the Wernecke test, and what experience the gentlemen have had with it. Some clinicians say that this test is worthless. I have made the test in various kinds of hemianopsia cases, some from tumor and some apoplectic, and believe it is valuable.

DR. SUFFA: In the case I spoke of, the patient's physician had diagnosed a carcinoma of the breast, which was removed. Then a growth appeared in one eye, which started in the optic nerve, finally involving the retina, including the macula, with total loss of vision. I kept track of her for two years. She finally developed a tumor in the cerebellum. She had no incoördination, except in the last two weeks. When an autopsy was made, after death, about sixty tumors were taken out of the cerebellum from the size of a millet seed to that of a walnut. How she could have gone so long with so few symptoms was a mystery. She had severe headache towards the end, during the last two weeks.

DR. MOON, closing: In reply to the question of Dr. Phillips about the operation performed in this pituitary case, all I can say is that the operation was performed by an experienced rhinologist,

a man of very high reputation. Whether he did a subsellar decompression or not, I do not know, but the patient had a very severe hemorrhage and paralysis followed. Death took place in three or four days.

Another question that is not for me to answer is about the Wernicke reaction. This reflex is proclaimed by some recent investigators to respond only to a beam of light thrown on the motor area of the retina and confined to within a few degrees of the macular region. The Wernicke test was not made in the lesion of the chiasm.

DR. METZGER, closing: The X-ray showed a marked cancellated enlargement of the body of the sphenoid bone, which encroached upon the posterior process of the sella. I do not think that it was a pituitary tumor at all in my case. Dr. Mackenzie will confirm the fact that the body of the sphenoid bone back of the sella was markedly enlarged, extending toward the posterior articulation with the occipital bone, just anterior to the foramen magnum. It was in the body of that bone that we found this heaped-up appearance. I think that the tumor was entirely within the bone; and by pressure, involved the structures alongside of the sphenoid bone, especially the optic tract on the right side.

In Dr. Moon's case, there was a tumor of the pituitary body; but in my case I do not see how you can make a cyst of the gland, when the X-ray showed this heaped-up appearance of the bone early, and later a flattened-out appearance.

Regarding Wernicke's sign, the test consists of throwing light into the eyes from the dark field. This showed no reaction in my case until the flame came forward to about the field in which there was light perception also. An ordinary flashlight brought rather closely to the eye, was employed. To me, it was very valuable in that it demonstrated an involvement of the pupillary arc.

REPORT OF ADDITIONAL CASES OF NEURO-LABYRINTHITIS*

WILLIAM G. SHEMELEY, M.D.,

Philadelphia.

AT one time the etiology of neuritis of the eighth nerve was considered of importance mainly in differentiating destructive lesions of this nerve.¹ Within the past five years a broader field of investigation has been opened, namely, the important part played by unrecognized focal infections, especially those resulting from diseased teeth, which produce a severe vertigo that extends over a considerable period of time. This vertigo is a symptom of neurolabyrinthitis of toxic origin, and since the general medical man is usually called upon to treat these cases, the condition frequently is either not recognized or else is incorrectly diagnosed. In a former paper,² the writer presented three cases of neurolabyrinthitis of drug action. Since that time several cases of vertigo have been studied in which the causative factor was focal infection resulting from unrecognized diseased teeth.

Many investigators³ have long recognized the importance of focal infection in the production of neuritis of the eighth nerve; yet numerous cases have been termed idiopathic, because no causative factor could be demonstrated, which would now, no doubt, be shown by radiograph to be due to focal infection resulting from diseased teeth. This may be presumption, but since the early investigators failed to find as etiological factors any of those things with which they were familiar, is it not reasonable to infer that since one of the most frequent causes is now found to be diseased teeth, in spite of the prophylactic advantage offered by advanced dentistry, the same pathological condition of the teeth existed in many of those earlier "idiopathic cases," but remained unrecognized from the lack of suitable means of diagnosis, the most important of which is the X-ray?

All cases of vertigo should be examined most carefully for

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spontaneous nystagmus; and the importance of careful technique in making this test can not be too strongly urged, for often valuable data in the study of nystagmus is lost because of faulty methods upon the part of the examiner.

CASE I—January 18, 1921. Miss G. W., age 26 years. Record No. 4446.

HISTORY: Patient comes because of dizziness that passes off quickly. She speaks of obstructed breathing. Has had nose and ear treatment by another physician. Does not take cold easily. Complains of pain in frontal region. Patient also states that her hearing is less acute, but she does not have any pain or discharge from the ears. The impaired hearing has been noticed for the past two years. She has post-nasal dropping of mucus, but does not have very much throat trouble.

EXAMINATION: *Nose*—Pronounced deviation of the septum high up and to the left. Impossible to see the left middle turbinate. Right middle turbinate polypoid and in contact with septum and lateral wall. Impossible to see posterior pharyngeal wall on either side. Hyperplasia of inferior edge of right inferior turbinate.

Throat—Tonsils medium size, submerged; cheesy deposits both sides on pressure.

FUNCTIONAL HEARING TEST:

<i>Right Ear</i>		<i>Left Ear</i>
8 m.	Convers. Voice	4 m.
1.5 m.	Whispered Voice	1.5 m.
1 m.	Akumeter	1.5 m.
<hr/>		
	Weber	Indifferent
sh. 5"	Schwabach	sh. 15"
+ 20"	Rinné	+ 10"
<hr/>		
sh. 28"	C1	sh. 38"
sh. 7"	c4	sh. 7"
sh. 28"	Air	sh. 20"
<hr/>		

The patient had a submucous resection of the nasal septum under Schleich anaesthesia. Right middle turbinate was removed and found to be large and cystic.

REPORT OF ADDITIONAL CASES OF NEUROLABYRINTHITIS

January 25, 1921: Tonsils were removed under cocain anaesthesia. Sent to hospital for the night. Returned home the next day.

February 14, 1921: Patient reports that she had an attack of dizziness yesterday. Felt as if she would fall over. The attack lasted for several minutes.

EXAMINATION FOR SPONTANEOUS NYSTAGMUS shows a very fine rhythmic rotary nystagmus to the left, when looking straight ahead. This is accentuated when patient looks to the extreme left.

GALVANIC TEST:

Right Ear—Kathode 4 ma. rotary nystagmus to the right.

Anode 3 ma. rotary nystagmus to the left.

Left Ear—Kathode $2\frac{1}{2}$ ma. rotary nystagmus to the left.

Anode 3 ma. rotary nystagmus to the right.

Patient was referred to Dr. C. Leefmans for radiograph of teeth. Report follows: Right lower wisdom is impacted; root canals of the second molar unfilled; slight infection at the apex; root canals of left lower second bicuspid unfilled; apical abscess; root canals first molar unfilled; slight apical infection. Patient had one tooth extracted on February 23, 1921, and since then has had two other extractions.

Following the extractions, the patient reports that her vertigo has practically disappeared.

CASE II—March 12, 1921. Mr. C. H., age 44 years. Record No. 4521.

HISTORY: Patient has been growing gradually deaf in the right ear for the past five or six years. Eight years ago patient was jaundiced for several weeks.

Five years ago, or about the time that deafness was first noticed, he suffered with a great deal of intestinal trouble, which was diagnosed "nervous indigestion." Ten or twelve years ago the patient took as a tonic iron, quinin and strychnin. This, he states, ruined his teeth. During the attack of so-called "nervous indigestion," he would become very dizzy. Upon going to bed would feel as if the bed were rocking. In 1915, while listening to an orchestra, he "suddenly heard three distinct octaves." Since that time his hearing has been diminishing. Has noises in his head like the noise of a machine shop. Has never had discharge

or pain in either ear, nor has he ever had any treatment for the ears.

EXAMINATION: Nose—General deviation of the septum to the right. Spine along the suture line on the left side. After shrinking, the left middle turbinate is visible, but is in contact with the septum and the lateral wall. The right middle turbinate is in contact with the lateral wall, but there is space between the turbinate and the septum. Both inferior turbinates are smaller than normal.

Throat—Tonsils enlarged, partly submerged; “cheesy” deposits both sides on pressure. Marked secondary catarrhal pharyngitis.

Ears—Functional hearing test revealed:

<i>Right</i>		<i>Left.</i>
3 m.	Convers. Voice	8 m.
ad conch.	Whisper Voice	2 m.
ad conch.	Akumeter	6 m.
<hr/>		
Weber→		
Norm. (?)	Schwabach	sh. 7"
±	Rinné	positive 15"
<hr/>		
sh. 42"	Air	sh. 20"
sh. 6"	C1	sh. 2"
sh. 32"	c4	sh. 23"
<hr/>		

OTOSCOPIC EXAMINATION: A. D.—Membrane intact; retracted. Posterior fold, narrow hammer handle. The membrane has a waxy appearance, due to thick organized secretion. Slight mobility with Siegle’s otoscope. Under Politzer inflation membrane came out over very small area and returned fairly promptly.

A. S.—Membrane is intact. There are chalky deposits in the posterior quadrant continuous with the posterior fold. There is another chalky deposit in the anterior inferior quadrant. The membrane is retracted. There is moderate mobility of the membrane with the Siegle otoscope. Under Politzer inflation the tympanic membrane came out over a small area and returned promptly.

Blood Pressure taken with the Tycos Sphygmotonometer gave:

REPORT OF ADDITIONAL CASES OF NEUROLABYRINTHITIS

Systolic 144 mm., Diastolic 92 mm., showing a pulse pressure of 52 mm.

EXAMINATION FOR SPONTANEOUS NYSTAGMUS resulted as follows: When looking to the extreme left, the patient has a spontaneous rhythmic nystagmus, rotary in character; that is, more pronounced than when he looks to the extreme right. When looking straight ahead, the patient has a spontaneous rhythmic, rotary nystagmus to the left of small amplitude.

GALVANIC REACTION:

Right Ear—

6 ma. Kathode produced a rotary nystagmus to the right.

4 ma. Anode increased the existing nystagmus.

Left Ear—

3½ ma. Kathode increased the existing nystagmus to the left.

5 ma. Anode produced a rotary nystagmus to the right.

While making the galvanic test the patient stated that the vertigo produced by the test was the same as that of which he complained. A blood Wassermann test, taken on March 16, 1921, was reported negative to all antigens. Radiograph of the teeth showed that the upper right second bicuspid was abscessed, and that extraction was indicated. The lower right second bicuspid had the appearance of an area of absorption around the root and extraction was advised. The teeth were extracted in April, 1921.

FUNCTIONAL HEARING TESTS made on the 15th of March, 1921, revealed:

<i>Right Ear</i>		<i>Left Ear</i>
	Weber →	
Normal	Schwabach	Length 7"
— 3" ±	Rinné	±
<hr/>		
short 24"	Air	short 25"

On May 23, 1921, the patient again reported at the office. Functional hearing tests at this time were made with a fork manufactured by the Standard Scientific Instrument Company, of New York. Air is heard normally with this fork 100" and by bone 65".

<i>Right Ear</i>		<i>Left Ear</i>
	Weber	Indifferent
sh. 22"	Schwabach	sh. 10"
pos. 20"	Rinné	pos. 55"

WILLIAM G. SHEMELEY

<i>Right Ear</i>		<i>Left Ear</i>
sh. 29"	Air	sh. 8"
sh. 36"	CI	sh. 16"
sh. 7"	c4	normal

Patient reports that since the extraction of the teeth he has been free from dizziness for the first time in the past five years.

Because of the mechanical obstruction in the nose, the patient had a submucous resection of the nasal septum performed on May 24, 1921.

On June 1, 1921, the anterior end of the left inferior turbinate was removed.

SUMMARY

CASE I—This is considered to be a case of neurolabyrinthitis resulting from focal infection produced by several diseased teeth that had been unrecognized. The diagnosis is based on:

(a)—The existence of a fine spontaneous rotary nystagmus to the left, rhythmic in character, and the findings with the galvanic test.

(b)—The presence of a bilateral shortening of the Schwabach test, with an indifferent Weber, and a positive Rinne. The air conduction is shortened bilaterally, as are also the low and high tones.

(c)—The fact that improvement did not take place in spite of corrective work until the diseased teeth were removed, would seem to point to them as the focus of infection.

CASE II—The reasons for classifying this as a case of neuro-labyrinthitis resulting from focal infection of unrecognized disease of the teeth are:

(a)—The functional hearing tests show involvement of the nerve, as evidenced by the shortened Schwabach and the positive Rinne, but there is also a catarrhal middle ear condition recognized by the otoscopic appearance of the tympanic membranes as well as marked shortening of the air conduction, which is out of proportion to the shortening of bone conduction.

(b)—The presence of a spontaneous rhythmic rotary nystagmus to the left.

(c)—The galvanic reaction, which revealed increased resis-

REPORT OF ADDITIONAL CASES OF NEUROLABYRINTHITIS

tance of the nerve on the right side, the stage of irritability evidently having passed.

(*d*)—The fact that the symptom of vertigo promptly disappeared after the extraction of the abscessed teeth.

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1831 Chestnut Street.

DISCUSSION

DUDLEY A. WILLIAMS, Providence, R. I.: I wish to congratulate Dr. SHEMELEY on his presentation of these two cases. They add to the previous cases he has reported in filling out the number of causes of neurolabyrinthitis, so that eventually they will make quite a series.

I have no criticism to make on the paper. I can only commend it. The presentation of the case is accurate, scientific and full. The method of handling the various diagnostic aids is certainly one that can recommend itself to you. I can only say that I am very glad to read cases like this, because of themselves they show exactly what the writer is trying to present. Too many times you read cases in which the writer presents something, but does not prove his point to most of us by reason of his inaccurate presentation.

G. W. MACKENZIE, Philadelphia, Pa.: I have had a chance to observe Dr. SHEMELEY's work, and know it to be first class.

DR. SHEMELEY: There is not much to offer in reporting cases beyond reporting the data and the conditions on which you base your diagnosis. However, I would recommend for serious consideration the use of the galvanic test as a further check on the various tests of the vestibular apparatus and the condition of the nerves. In the case that Dr. Green spoke of in relation to the functional hearing test, in testing the man out, we made the galvanic test. The nerve responded, but to no kind of test did the hearing respond; nor did the cochlea respond until improvement

had begun. You can use the galvanic test in testing the cochlea, but in this case the mentality of the boy was such that it was hard to get him to understand that for which he was to listen. At first he gave a beautiful result in testing the cochlea. We usually check them up to see whether they agree; and with the next test we threw this out, because his answers were contradictory.

The test is also valuable in detecting the exact location of the lesion.

DR. MACKENZIE: I wish to give Dr. Green and the other students the credit for making the diagnosis in the case of George. They made the differential diagnosis between the labyrinthine lesion pure and simple and the eighth nerve lesion.

D. A. WILLIAMS: I want to draw attention to one thing that Dr. SHEMELEY neglected to say in his report. He mentioned the normal duration on bone and air of the fork made by the Standard Scientific Company, but did not give the normal duration of the other fork that he made his tests with. This should be placed in every paper, because these forks are not all the same. The particular fork he used, having worked with it myself, I know runs 110 seconds on air and 70 seconds on bone. The Standard Scientific Company's fork was 100 seconds on air and 75 seconds on bone. When you report cases state the normal duration on bone and air of your fork; then we will be able to see at a glance the extent of the deviation from normal in each case.

DR. SHEMELEY: In reply to Dr. Williams' remarks I will state that the second fork used in making the tests was a Reiner fork with air conduction 110 seconds and bone conduction 70 seconds, giving a positive Rinne test of 40 seconds.

CHANGES IN REFRACTION IN DIABETES MELLITUS— CASE REPORT

W. D. ROWLAND, M.D.,

Boston, Mass.

THIS is a case report of acute, grave diabetes, in a young female student nurse in which there was an increase in hyperopia and paresis of accommodation. Recovery from refractive error preceded fatal termination of the disease.

PREVIOUS HISTORY.—Miss E. W., aet. 27, first year student nurse, October 31 to November 10, 1920, was in hospital for surgical treatment and operation for infected nail on right great toe. Gas-ether anaesthesia was administered. Recovery was uneventful and patient went back to duty. Urine showed: sp. gr. 1033, sugar +, albumen s.p.t., but this was, unfortunately, not followed up by the interne, and the patient not knowing of the urinary findings had no suspicion.

Subsequent to the above hospitalization, she developed increasing thirst with polyuria, and lost considerably in weight. After having lectures on diabetes in her training instruction, she became concerned about her symptoms and reported for examination.

Urine.—May 25th, showed: 4800 cc., sp. gr. 1031; solids 345.6 gm.; urea 38.4 g.m; albumen s.p.t.; sugar 307.2 gm.; acetone large trace.

Blood.—May 24th: Haem. 90 per cent.; R. C. 5,320,000; W. C. 15,850; lymphocytes 18 per cent. Large mononuclears 5 per cent.; polymorphs 76 per cent.; sugar 505 mg. per 100 c.c..

Diagnosis.—Diabetes Mellitus.

PRESENT HISTORY.—June 2-28, 1921. In hospital, medical service. On admission the patient is thin in flesh; has marked thirst and dryness of the mouth. She is much debilitated and the appetite is poor.

Clinical Notes.—June 6th, weight, 113 3/4 pounds. June 8th, restricted diet brought gastric upset; she vomits and dislikes food, and sleeps poorly. June 12th, much improved. Appetite and digestion satisfactory. June 26th, weight, 116 pounds. June 28th, continued improvement. Increase in weight, and strength; excessive

thirst down to normal. To be allowed to go home and continue treatment under observation.

Urinalysis.—June 3rd, 2640 cc., 1035 sp. gr., 233.2 gm. solids, 29 gm. urea, 116 gm. sugar, acetone and diacetic acid +.

June 26th, 2940 cc., 1039 sp. gr., 267.5 gm. solids, 26.4 gm. urea, 217.5 gm. sugar, acetone trace.

Analyses were made each second day. All showed s.p.t. albumen, the results varying slightly.

Blood Analysis.—June 9th, haem. 90 per cent., R. C. 5,000,000, W. C. 10,000, lymphocytes 27 per cent., polymorphs 73 per cent. June 13th, blood-sugar is 588 mg. per 100 cc.

Treatment.—Sugar-free diet; sodium bicarbonate; Rest.

At Home Under Treatment and Observation.—June 29th-Sept. 24th, Urinalyses weekly—July 5th, 3300 cc., 1034 sp. gr., 260.7 gm. solids, 23.1 gm. urea, 21 gm. sugar, acetone and diacetic acid trace. September 15th, 2400 cc., 1028 sp. gr., 156 gm. solids, 9.6 gm. urea, 136.8 gm. sugar, acetone large amount.

Last Illness History.—September 25th-28th. In hospital in coma. During the home observation the patient improved in all respects, apparently; had good appetite, slept well, and was cheerful, desiring to return to duty.

Clinical Notes.—September 25th, about 5 A. M., she felt unwell and confused, and during the day developed definite diabetic coma. This was a sudden change; the previous day she was well enough to attend moving pictures. On entrance to the hospital in afternoon coma was pronounced; she could not communicate, but would open her eyes on request.

September 26th-28th, no nausea or vomiting. Urine obtained by catheter. Able to take small amounts of nourishment. T., 95, 101.3; P., 133-120; R., 20-28.

September 28th, death ensued at 2 P. M.

Treatment.—Sodium bicarbonate, submammary and intra-rectal.

Urinalysis.—September 26th, 1028 sp. gr.; sugar, large amount; acetone, very abundant; diacetic acid present.

OPHTHALMIC EXAMINATIONS

Previous History.—January, 1917, has worn glasses 3 1/2 years, now has severe headaches.

CHANGES IN REFRACTION IN DIABETES MELLITUS—CASE REPORT

V. R. 20/25 wearing + 1.25 = + .37 ax 90 = 20/20—

V. L. 20/40— + 1.25 = + .75 ax 120 = 20/25—

Was given—

O. D. + 2.25 = 20/20

O. S. + 2.00 = + .75 ax 120 = 20/20-2.

March, 1919.—Recurrence of headaches recently.

Was given—

O. D. + 1.75 = + .37 ax 30 = 20/20-4.

O. S. + 2.25 = + .75 ax 120 = 20/20-3.

Fundi are normal, orthophoria at distance, but marked convergence insufficiency for near point. Pupils equal and react normally.

Present History.—June 4, 1921. Complains of blurred near-vision for few months. Odor of acetone is marked.

V. R. = 20/100 with above glasses = 20/40 add + 4.00 = No. 1 J.

V. L. = 20/100 with above glasses = 20/40 add + 4.00 = No. 1 J.

Cover test, orthophoria at distance; convergence insufficiency near point.

Media, fundi, pupils, tension normal. Acetone odor marked.

Rx to be re-examined.

June 13.—Dynamic tests:

Skiascope—

R. + 8.00 = + .50 ax 90

L. + 8.00 = + .75 ax 120

Keratometer—

R. 43 .75 ax 90

L. 43 1.25 ax 110

Subjective—

V. R. 8/200 + 5.50 = + .50 ax 30 = 20/20 and No. 1 J. N. P. accom. = 18 cm.

V. L. 5/200 + 6.50 = + .75 ax 120 = 20/30 and No. 1 J. N. P. accom. = 18 cm. (Conv. = 10 cm.)

Near Vision, accepts—

O. D. + 8.50 = +.50 ax 30 = No. 1 J. N. P. accom. = 12 cm.

O. S. + 10.00 = + .75 ax 120 = No. 1 J. N. P. accom. = 11 cm. (Conv. = 10 cm.)

Maddox Rod = Es. 1 at distance. Ex. 3 at near point.

Media, pupils, fundi, tension normal. With direct ophthal-

moscopy + 3.00 to + 5.00 was necessary to get details, whereas the observer usually requires — 1.00 — 3.00 in average cases.

Haitz chart showed no central scotomas. Stereoscopic fusion and perspective were faulty. Perimeter showed form and color fields about normal.

Rx. above distance refraction given for constant use. To report in one month.

July 22.—After two weeks' use of last prescription for glasses, blurring developed at distance and soon thereafter at the near point; whereupon all glasses were discarded and reading was possible and satisfactory. Has gained 7 pounds in 7 weeks off duty. Urine was 90 oz. last test.

Dynamic Tests.

Skiascope—

R. + 3.00 = + 1.00 ax 90

L. + 3.00 = + 1.00 ax 110

Keratometer—

R. 43 1.00 ax 90

L. 43 1.50 ax 110

Subjective—

V. R. 20/30 + 2.00 = + .50 ax 30 = 20/20 and No. 1 J. N. P. accom. = 12 cm.

V. L. 20/40 — 2 + 2.00 = + .75 ax 115 = 20/30 and No. 1 J. N. P. accom. = 10 cm.

Maddox Rod = Es. 3/4 dist., Ex. 4 near point. Conv. N. P. = 10 cm.

Near Vision, accepts—

R + 3.00 = above cyl. = No. 1 J.

L. + 4.50 = above cyl. = No. 1 J.

Maddox Rod = Ex. 8 N. P.

Media, fundi, pupils, tension normal.

Blind spots taken on Lloyd Stereocampimeter, and show slight enlargement down and to the right, equally in both eyes.

Rx. Use glasses of March, 1919, constantly. Report in two weeks.

Sept. 12.—Feeling fine, and desires to re-enter hospital for duty. Last urine, one week ago, shows 75 oz. Marked acetone odor observed.

CHANGES IN REFRACTION IN DIABETES MELLITUS—CASE REPORT

V. R. = 20/30 + with glasses = 20/20 + and No. 1 J. (Es. 1 at distance.)

V. L. = 20/40 — with glasses = 20/30 + and No. 1 J. (Ex. 1 at near point.)

Blind spots by Lloyd Stereocampimeter are normal. (There is a question of error in enlargement found on previous examination.)

Rx. Report in two months.

Sept. 28.—In hospital, in diabetic coma. Pupils react to light. Right pupil is 1 1/2 mm. larger than left. With much difficulty direct ophthalmoscopy was accomplished and showed the retinae to be oedematous (pale) and best seen with + 5.00 D. S.

COMMENT ON GENERAL FINDINGS.—The clinical downward progress of this case was so rapid that had treatment been instituted upon the first evidence of sugar in the urine, it is very doubtful if the outcome could have been different. The life of the patient might have been prolonged, but profound organic disturbance must have been present. Usually young subjects show poor prognosis.

The treatment materially improved the metabolism, as shown by the reduction of acetone and diacetic acid in the urine for a time. Marked acetone odor detected in the presence of the patient showed elimination through the expired air, and was an index as to the amount of acetone bodies in the blood.

COMMENT ON OPHTHALMOLOGIC FINDINGS.—Comparing the findings of June 4, 1921, with those of 1917 and 1919 (obtained later) one would be led to believe that the hyperopia had been increased, but that a paresis of accommodation was the chief fault; the former could be explained upon ciliary relaxation manifesting a latent hyperopia.

However, in the results of a more complete examination June 13th, all tests showed a decided increase in hyperopic measurements, and that the accommodation was also reduced. The keratometric readings of this and the examination 5 1/2 weeks later were almost identical, the latter showing a slight increase in the curvature in the vertical axis. Urinary examinations over this period do not explain the improvement in the refraction, the 24 hour amount, and sugar being both increased.

June 13th—2880 cc., 1027 sp. gr., 181.2 gm. solids, 28 gm. urea, 146.8 gm. sugar.

July 19th—2700 cc., 1037 sp. gr., 232 gm. solids, 21.6 gm. urea, 162 gm. sugar.

Diacetic acid, small amount.

Acetone, large amount.

Assuming that there existed a toxemia affecting the tonus of the ciliary body, a difference of 5 diopters in skiascopy and 4.50 diopters in subjective readings between June 13th and July 22nd, could hardly be accepted as latent hyperopia, but that an actual change in hyperopia existed. Retinal edema and lens change might explain this, although changes in these structures could not be detected. Microscopic observation with the Gullstrand instrument might have elicited an explanation.

P. G. Doyne, in *Archives of Oph.*, July, 1921, summarizing a discussion on "Diabetes in Relation to Diseases of the Eye," before the Ophthalmologic Society of The United Kingdom, classifies the ocular complications as:

IMPORTANT	LESS IMPORTANT
1. Retinitis	6. Alterations in tension.
2. Cataract	7. Alterations in refraction
3. Retrobular Neuritis	8. Iritis
4. Retinal and Vitreous haemorrhages	9. Debility of accommodation
5. Lipaemia retinitis	

Under "Alterations in Refraction" he says: "This has frequently been noticed. The alteration is usually an increase towards myopia and alterations have been as much as 7 D. A rapid return to the normal, occurs with decrease in sugar output."

My observation does not give accurate information about the incidence of the hyperopic increase in my case but the return to normal was very rapid (+ 6.50 D. S., June 13th, to + 2.00 D. S. July 22nd, by record; and "within two weeks" as stated by the patient), and this in the presence of an increase in sugar as shown above.

The American Encyclopedia of Ophthalmology, Vol. V, pp. 3929-30, reviews the reports of Wescott and Ellis, Lungsgaard, Zentmayer, Gallus, Woelfflin, Davis and Kadinsky on "Refraction Changes in Diabetes." The following points are concluded: The refractive changes are not accompanied by changes of tension; occasionally by changes in corneal curvature; lens changes (vacuoles)

have been observed; usually is acute, bilateral, and transitory, of favorable prognosis; paresis of accommodation frequent, paralysis rare; usually occurs in acute cases and there is no definite relation between the refraction changes and that of the amount of sugar in the urine; no satisfactory explanation yet offered.

The use of a cycloplegic to determine static measurements before and after the increase of hyperopia in this case would have given a better background to compare with the pathologic findings, for exact statistics, but the former was not possible for me, and the latter was prevented by the early death of the patient. However, the findings are quite enough to draw some conclusions from, and this is my reason for reporting the case.

I am indebted to Dr. Paul Haley, of Medford, Mass., for the eye records of January, 1917, and March, 1919; to Dr. Frederick P. Batchelder, of Boston, for medical records, and to Dr. Helmuth Ulrich, of Boston, for the laboratory findings. To these gentlemen I desire to express my thanks.

CONCLUSION.—We may conclude that both an increase in hyperopia and a paresis of accommodation was manifested in this case, but no etiologic solution could be deduced.

220 Clarendon Street.

THE PSYCHOLOGY OF THE DEAF.—“In my wide experience with the deaf and hard-of-hearing it has seemed that the thing most needed by them is access to the spiritual springs of human life. No other class of people is so shut off from these springs, for they are to be found above all else in mutual intercourse of soul with soul. By the fact of their deafness, such human companionship is denied in a very large measure. The deaf are thrown upon themselves and their own thoughts and resources. As they have expressed it again and again to me, they are ‘hungry’ for a real conversation; they are ‘lonely’ though surrounded by family and friends. It is not surprising that morbidness, hopelessness and the ‘blues,’ and lack of courage and self-confidence mark their increasing deafness and consequent increasing isolation.”—E. B. Nitchie, *Lip Reading*, Fred’k. A. Stokes Company, New York. D. M.

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Editorial

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"Recompense."

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Dr. Ralph I. Lloyd, Brooklyn, N. Y., "Eye Complications."

Dr. H. P. Bellows, Boston, Mass., "Ear Complications."

ENDOCRINOLOGY—MODERN DISCOVERIES AND INTERPRETATIONS

Special joint meeting of the A. I. H. and O., O. & L. Societies in Clinical Medicine, Surgery, Gynecology, Obstetrics, Ophthalmology, Otology, Laryngology and Anaesthesia. (Note—Recognizing the correlation of endocrinology pertaining to the allied bureaus of these Societies, it is, therefore, apropos that this subject be given modern team work consideration and presentation, showing the

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direct, as well as the associated factors in these different departments of medicine.)

Dr. Augustus Korndorfer, Jr., Philadelphia, Pa., "Clinical Medical Considerations."

Dr. Hugh Bebee, Ann Arbor, Mich., "Surgical and Gynecological Deliberations."

Dr. Leon Loizeaux, New York, N. Y., "Obstetrical Observations."

Dr. Burton Haseltine, Chicago, Ill., "Specialist's (Eye, Nose and Throat) Standpoint."

"Anaesthesia as Related to This Field."

Dr. Alonzo Waterman, Chicago, Ill., "General Discussion" opened.

Dr. Claude A. Burrett, Columbus, Ohio, "Surgical and Gynecological Deliberations."

Dr. Gilbert FitzPatrick, Chicago, Ill., "Obstetrical Observations."

Dr. G. J. Palen, Philadelphia, Pa., "Specialist's (Eye, Ear, Nose and Throat) Standpoint."

WEDNESDAY, JUNE 21, 1922. SEVENTH SESSION, 2 P. M.

O., O. & L. Golf Tournament, Golf Club. Prize, President's Cup.

CLINICAL

Dr. Frank Novak, Chicago, Ill., "Tumors and Growths of the Mouth and Throat, Handled by Diathermia."

Dr. George Mackenzie, Philadelphia, Pa., "Labyrinth Operation."

Dr. George Suker, Chicago, Ill., "Ophthalmoscopy Clinic."

OPEN LETTER FROM THE SECRETARY, DR. NEIL BENTLEY, OF DETROIT

March 14, 1922.

Fellow Members of the O., O. & L. Society:

There is every indication that the Chicago meeting will be the best ever pulled off by the O., O. & L. Society. We are meeting

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in the center of the country and will be housed all under one roof in a magnificent new hotel.

There are so many good things that all cannot be mentioned. The following are a few of the features. They may be rearranged, but all will be given:

MONDAY.—Dr. Novak, of Cook County Hospital, will give a paper, illustrated by slides, on "Cancers of the Mouth and Throat."

Dr. H. M. Goddard, of Philadelphia, will give a paper and several reels on the "Correction of External Deformities of the Nose."

TUESDAY.—There will be a clinic at Cook County Hospital. Dr. Novak will show his diathermic work on tumors and growths of the mouth and throat.

Dr. Suker, of Chicago, perhaps the greatest living authority on fundus cases, will give a clinic on "Medical Ophthalmoscopy." He will have all the resources of Cook County Hospital at his disposal. This one feature alone will repay you for the time and expense of attending the convention.

In the evening, Dr. Dean Myers will have charge of the Bureau of Economics. This will be one of our star bureaus.

WEDNESDAY.—There will be given a co-operative session on the "Disturbances of the Upper Respiratory Tract With Associated Eye and Ear Symptoms." This subject will be handled by well-known specialists in the various fields.

WEDNESDAY P. M.—We go on one grand bat, every one to his own taste. Ask President McCleary about the big golf stunt that is going to be pulled off.

THURSDAY.—We have "La Grande Finale." The subject of "Endocrinology" will be handled in a joint session by the A. I. H. and the O., O. & L. Societies. This most vital subject will be discussed by the Internist, the Surgeon, the Gynecologist, the Obstetrician, the Ophthalmologist, the Otologist, the Laryngologist and the Anaesthetist.

This session will be a classic. No one should miss it.

Among the features of the meeting will be a "Labyrinth Operation," by Dr. Mackenzie, of Philadelphia.

Fraternally yours,

NEIL BENTLEY.

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COMMUNICATION FROM THE PRESIDENT OF THE
O., O. & L. SOCIETY

March 1, 1922.

My Dear Dr. Mackenzie:

I HAVE just received a letter from our mutual friend, Haseltine, asking me why I did not have you do a labyrinth operation on Clinic afternoon at Chicago, Tuesday, 20th.

As you know, Haseltine has charge of the local arrangements there and I really had not thought about it, but sincerely and highly approve of a move of this kind.

We are trying to develop a clever as well as a high grade clinic and this would fit in admirably. The clinic is to be held at the Cook County Hospital.

Dr. Haseltine states that he wrote you about Dr. George Suker of Chicago giving an ophthalmoscopic clinic that afternoon. This will be for the eye men.

Shall appreciate your good co-operation.

Sincerely,

MCCLEARY.

P. S.—For the past ten years I have enjoyed hearing about the wonderful golf games played by the different members of the O., O. & L. Society. Without doubt these individual verbal elaborations rival the stories told about Dr. Cook in his travels to the North Pole. The enthusiasm of these golfers' expressions seem to be current among all classes of players.

In lieu of the unproven testimony of so many golfers in the Society, I am arranging for a real Golf Tournament for the members of the O., O. & L. Society, Wednesday afternoon, June 21st, 1922. Application blanks will be mailed in due time. Prizes will be arranged accordingly. McC.

INTRACRANIAL COMPLICATIONS

UNTIL the present day the general knowledge of intracranial diseases and intracranial complications has been so little disseminated, even among specialists, that with the exception of a few conditions, the symptoms presented usually give but an indefinite idea as to the cause. These cases call for different viewpoints, for with intracranial conditions we come to the "Village Commons" of professional relations. The business in hand really belongs in common to ourselves, to the neurologist, to the roentgenologist, to the brain surgeon, and to specialists in other fields as indicated by the symptoms. Seldom does the individual specialist have sufficient education to cover all these fields thoroughly, and thus no one man rightly should venture alone a diagnosis leading to treatment.

There is no longer an excuse for personal timidity. Collectively we know a great deal about intracranial disease, and much valuable matter is in the literature. The prospect for many cases is so unfavorable if left untreated that it is an obligation to act thoroughly and promptly. We sometimes hear that "the patient is going to die without an operation, when possibly an operation will give him a chance." When the case has reached this point, the chances are indeed small, and the results are usually interpreted to the discredit of intracranial operations.

We know that this danger from delay must apply in other serious intracranial conditions as it does in those cases of ear complications with which we are more familiar. With us, *early* interference does not mean interference when a meningitis has become diffuse, nor when a puncture is positive, nor when other obvious symptoms are present, but means interference prior to this time.

As to intracranial tumors of apparently primary origin, we come to a field less developed by our specialty, but probably of as much interest to us in its complications as it is to the neurologist. Here again, "to obtain the best operative results, brain tumors must be diagnosed early" (Dandy). The sequelae of these conditions and the hopelessness of the terminal stages, place upon us an obligation to make this early diagnosis and to institute early treatment. There is for brain tumors but one form of treatment, (after excluding syphilis) early removal. A valuable aid in diagnosis is the air inflation of the ventricles, a procedure so well established that

with the X-ray and the clinical findings (carefully made) diagnosis and localization are usually certain. One can well read and digest Dandy's article upon this subject (*J. of A. M. A.*, Dec. 10, 1921).

We have referred to the ear complications and to primary intracranial tumors, but we have left untouched the nasal sinus complications, for which other specialists will look toward us for final judgment—much of the fog has cleared away from this subject with the result of greater safety and saneness in operations. The sphenoid has introduced us to a consideration of the pituitary and its pathology—but unfortunately endocrinology has been of little help here, and the surgery of the locality is necessarily most radical. Here again we have to get the helpful opinions of other specialists.

The cases, however, such as Drs. Moon and Metzger so well report are an illumination as to what this help means.

Finally, we cannot leave the subject without bringing to mind what Mackenzie has so often illustrated to us—how syphilis simulates here within the skull as it does elsewhere. That “mocking-bird of diseases” should never be outside of our reckoning until thoroughly and fairly eliminated.

D. M.

Dandy's article on BRAIN TUMORS, in the *J. A. M. A.*, Dec. 10, 1921, is really too excellent an article to abstract into short compass. In it he deals with the factors that contra-indicate decompressions, which in the past have been too frequently used with an idea that something actually was being accomplished. The results of this operation usually permit the expansion of the growth. In hydrocephalus the cerebral ventricles dilate as rapidly as the protective coverings of the brain—*i. e.*, the dura and the skull—will allow. Remove these and the brain protrudes as far as the new coverings of muscle and skin will permit; but there is in no wise any reduction in intracranial pressure. In tumors without hydrocephalus, that is without obstructed ventricular drainage, the first results of decompression are apparently good; but the cause is not removed; growth continues, choked disk, and the rest of the old condition return. Dandy recommends as most useful the more exact modern means at hand to localize tumors of the brain—ventricular air inflation prior to the X-ray. Thorough operative extirpation is the final aim and the only source of permanent relief.

D. M.

THE RELATION OF EAR CONDITIONS TO HYPERTROPHIES OF THE TURBINATE*

WILLIAM M. MUNCY, M.D.,

Providence, R. I.

MY only apology for bringing an old subject before this Society is the apparent neglect of proper consideration among aurists of the important role that the posterior end hypertrophies of the turbinates play in the field of catarrhal deafness.

In many cases where enlarged tonsils and adenoids have received due surgical consideration, and in some instances even a submucous resection of the septum performed, the raspberry-like excrescences of the posterior ends have been allowed to continue their insidious course.

In the old days when one had to depend upon a post-laryngeal mirror and direct visual inspection in certain anatomical conditions, there might have been some excuse for failing either to detect the presence of this hypertrophied tissue or to appreciate the baneful results of its presence. However, with the advent of the post nasal pharyngoscope, there seems to be no reason for failing to take into proper consideration this most important pathological condition.

From our point of view this hypertrophy may vary from a simple hyperplasia of the mucous membrane to a distinct growth of tissue at the posterior ends of the turbinates, forming polypoid-like masses easily moved about on the end of a probe.

We all recognize the relationship of a polyp in the middle ear to the continuance of discharge. In the same manner, the so-called post-nasal catarrh will continue so long as excessive mucous-secreting tissue of the turbinates is allowed to function. Its relationship to catarrhal deafness depends more upon the proximity of the posterior end to the eustachian tube opening than upon the amount of involvement of the end itself. That is, if the anatomical relationship of the nose is such that a slight hypertrophy comes in contact with the mouth of the tube, it will cause much more trouble

*Presented at the annual meeting of the O., O. & L. Society, Washington, D. C., June, 1921.

than a larger mass further removed. This is especially true if, as is often the case, the lip of the mouth of the tube itself is also edematous or, as in some instances, polypoid-like excrescences encroach upon the opening.

If the above picture has added to it some adenoid tissue in the vault and a mucoid degeneration of the ethmoids, we have completed a commonly-seen vicious circle of post-nasal pathology.

Besides the visual picture presented by a case of posterior end hypertrophy, the patient will dwell upon the symptom of fluctuating deafness depending upon atmospheric conditions, being always worse on cold damp days, especially if bad weather continues over a long period, and almost instantaneous relief in a high, dry altitude. A frequent complaint is the tickling in the back of the nose, sometimes referred to the middle-ear, due to the swelling of the posterior end coming in contact with the tubal opening. Treatment consists of either medical applications or surgical, depending upon the amount of involvement, and frequently both are used. Shrinking with cocain and the application of silver nitrate at frequent intervals is very efficacious.

Whenever possible, as much offending tissue as may be removed surgically, even if ever so small, will shorten the process, and in all cases where a considerable amount of hypertrophy is present time is lost by temporizing.

Removing phantom-like growths from posterior ends of the turbinates is a sport all its own, and often requires all the patience and perseverance that one possesses. If you do not succeed on the first day, treat with silver nitrate and try again on subsequent visits. If slight deflections of the septum prevent instrumentation, a resection of the same might be in order, if for no other purpose than to be able to get at an enlarged hypertrophied end.

In order to facilitate the technique of this operation, we have devised a snare for the removal of posterior ends. It has the following points in its favor: The wire loop is not in evidence until the end of the instrument is in the post-nasal space. When the wire is pressed outward it is at right angles to the shaft. The adjustment of the shaft is movable so that the wire loop comes in back and opposite the end you wish to remove. At the same time, the relationship of the handle to the shaft is such as to be out of the way, so that if the growth is at all visible one can take advantage

of the fact when applying the snare. Furthermore, the wires are threaded into the end which expedites the changing when the knack of applying the cover is mastered. We have found this instrument of considerable value in our office during the last six months and hope it may prove satisfactory to many when endeavoring to remove tissue from this not too accessible region.

I shall take the liberty of briefly reporting one case from our records:

Mrs. C. H. C., age 55, called at our office December 30, 1920.

HISTORY.—Deafness in childhood. At that time attributed to quinine, so much being given that she was totally deaf for ten weeks. This deafness was said to have disappeared. Present deafness to have been of at least fifteen years' duration. Came on gradually; first in right. Never any discharge or pain in ears. Noises in both ears, which had become louder and more persistent as the disease progressed. Has had series of treatments by numerous aurists during this time but deafness continues to increase. No operations were performed. Usual treatments, consisting of Politzerization and medical applications. Of late has been advised to learn lip reading as nothing will prevent the increasing deafness.

EXAMINATION.—*Right Ear.*—Drum intact, dull, opaque; hammer handle sharp; some retraction; immobile to Siegel; slightly mobile to Politzer. Inflation good, but does not go back well.

Left Ear.—Drum intact, fairly brilliant, very opaque; hammer handle sharp; some retraction. immobile to Siegel; slightly mobile to Politzer; goes back¹ well.

Nose.—Good space both sides. Thickened septum in back and high up. Turbinates on both sides have space between them and septum, and between them and lateral wall. Tissue shrinks well.

Post-nasal.—Both tubal mouths edematous; left tube has small amount of adenoid tissue. Right tube edematous; large posterior ends on both sides; that on the right covers tubal opening. Functional hearing test was as follows:

Right Ear

2 ft Conversation 4 ft.

1 ft. Whisper 1 ft

2½ ft. Akumeter 2 ft

Weber indif.

L. 29 Schwabach L. 32

Left Ear

WILLIAM M. MUNCY

— 40 Rinne — 53

Sh. 83 Air Sh. 87

Sh. 42 C Sh. 44

Sh. 19 C4 Sh. 18

TREATMENT.—Posterior ends of both lower turbinates removed by snare. Treatments twice a week, consisting of shrinking down with cocain; application of silver nitrate 2 per cent.; Politzerization; air massage and high frequency electricity. Patient improved rapidly and though not entirely cured, can occupy her accustomed place in society without being at all embarrassed by her previous affliction. She is at present traveling, but on returning will continue her cure.

Her test on February 9, 1921, a trifle over one month's treatment, gave the following functional hearing test:

Right Ear

Left Ear

15 ft. + Conversation 15 ft. +

8 ft. + Whisper 8 ft. +

8 ft. + Akumeter 8 ft. +

Weber indif.

L. 26 Schwabach L. 23

— 31 Rinne — 30

Sh. 40 Air Sh. 42

Sh. 19 C. Sh. 20

Sh. 6 C4 Sh. 7

23 Waterman Street.

DISCUSSION

DUDLEY A. WILLIAMS, Providence, R. I.: I am rather loath to discuss this paper, because it emanated from our office. We found, during the last year, a great many more posterior end hypertrophies than we thought we should. So much so that we make it a routine measure, before we attempt to take up any other form of treatment, to get rid of any growth of this character that seems to have any connection at all with the trouble. I cannot say that the improvement of this particular case can be attributed entirely to the removal of posterior end hypertrophies. It is used in illustration mainly because we found large posterior end hypertrophies, one of which, as the history shows, was practically overlapping the

mouth of the eustachian tube. I feel certain that if that had not been removed the result would not have been the same.

It is difficult to snare posterior end hypertrophies and get them off at all cleanly. Those of you who have tried to use the ordinary Krause snare, in which you bend the wire before introducing it, know how difficult it is to get the bent wire into the nose, on account of the lack of space.

To get rid of that trouble, we invented this attachment, which does away with all the inconvenience of bending the wire. The wire is bent after the instrument is introduced into the nose, and by its use the removal of posterior end hypertrophies becomes a fairly easy procedure.

GEORGE J. ALEXANDER, Philadelphia: I admire the regard Dr. Muncy has for this common pathological condition that occurs on the posterior end of the inferior turbinates. I have been much interested in the study of its presence and effect upon the nose, post-nasal space and the ears, resulting sooner or later, in defective hearing.

It is an unalterable fact, as Dr. Muncy has stated, that this hyperplastic condition is not as generally observed as it should be and credited with the importance it deserves, and though I had thought of putting my impressions on the subject in writing, I am pleased to have this opportunity to concur with Dr. Muncy's observations and findings.

The hearing of these patients after treatment of the hyperplasias, whether it be topical or surgical, improves materially, and in many instances is completely restored. Removal of the raspberry-shaped body is undoubtedly the proper procedure. I would, however, like to call attention to a case which illustrates fairly well that local treatment can be used with rather satisfactory results, where, for any reason, surgical measures cannot be employed.

A female adult hoped to overcome a chronic suppurative otitis media in the right ear by the correction of intra-nasal obstructions, of which hyperplasias of the inferior turbinates formed an important part. After the deformity of the septum was corrected an inferior border hyperplasia of the posterior half of the left inferior turbinate was removed, and sterile gauze and vaseline packed under the turbinate. A few days later the same procedures were carried out in removing an inferior border hyperplasia from the posterior

half of the right inferior turbinate. A large posterior end hyperplasia on this turbinate was not removed because of unusually free bleeding at the time of operation, which was not at any time completely controlled by the gauze pack under and around the operated turbinate, or by subsequent packs, until one week later a profuse hemorrhage following the removal of the pack could only be entirely controlled by the injection of 10 c.c. of horse serum. Due to the tendency to bleed and this hemorrhage, the patient refused to have the posterior end removed.

I then began to treat the condition locally by shrinking with cocain, and applying argyrol tampons to the nose and silver nitrate solution to the hyperplasia and to the posterior wall of the pharynx for the chronic pharyngitis that resulted from the hyperplasias, etc., in the nose. This treatment was given in conjunction with treatment to the affected right ear over a period of about one year, resulting in intermittent cessation of the discharge for two years, when a few recent treatments again caused the discharge to cease and the nose and pharynx to be in fairly good condition.

As a result of my study of this case while carrying out the treatments, I am convinced that without the combined effect of the topical treatment with the incomplete surgical efforts, control of the discharge from the ear could not have been accomplished.

This case, with many others, has been demonstrative of the temporary improvement that can be obtained in the ear and locally by the conservative method, where it has to be substituted for surgical interference with its better and more permanent effect.

Another important feature in connection with the removal of the posterior end and applies as well to the inferior border of the turbinate, is the technique in applying a cocain solution locally as an anesthetic. You have noticed that as soon as cocain is applied to a hyperplasia, shrinking takes place. That is what has occurred to me so frequently in trying to remove hyperplasias that I have adopted a little system of my own; because I found after I had done the operation painlessly—which is one of the two most important features, the other being thorough removal of the hyperplastic tissue—and relaxation had taken place, too much hyperplastic tissue remained. Hence, I began to think of a way to overcome this unsatisfactory result, and found that it could be done very well if I did not make more than one application to the turbi-

nate of a 4 per cent. solution of cocain, which furnishes satisfactory anesthesia. A 20 per cent. solution shrinks the tissues too rapidly and profoundly. The cocain solution is first applied to the septum and other parts in the nose and to the turbinate last; in this way getting deeper anesthesia in the former, because I observed that the instrument coming in contact with these parts is more distressing to the patient than the actual cutting off of the hyperplasia, which is done rather quickly. As I have previously inferred that missing a large portion of the hyperplastic tissue through unnecessary shrinking of the tissues of the turbinate is an objectionable feature, it is, therefore, infinitely better to use less cocain and get all the tissue.

GEORGE B. RICE, Boston: Removal of posterior end hypertrophies, as Dr. Muncy has said, offers some difficulties, seemingly, at times, insurmountable. In the early days I experimented with various snares, including the Jarvis, a straight snare with a jaw at the end, turned at an angle, with the wire in front of it. The jaw holds the posterior turbinal end, when it is a simple matter to snare it off. This was successful in a certain number of cases, but I gave up this method because I found that almost all of these posterior end hypertrophies were associated with a true hypertrophy of the whole inferior turbinated body, showing particularly at the floor of the nose.

There may not be contact with the septum at any point, but if a probe is put under the turbinal and it is raised up from the floor it will be seen that the whole inferior portion is involved.

WILLIAM H. PHILLIPS, Cleveland, O.: I want to second what Dr. Rice has said. A few years ago there was a wholesale massacre of the inferior turbinate to get space in the nose, rather than do a septum operation. Then with resection of the septum there was an opposite swing of the pendulum, and it became almost a crime to touch an inferior turbinate. Indeed, not so long ago, a man got up on the floor of this Society and said, sarcastically, that he did septum resections, not turbinate resections. The man who does septum resections and neglects his inferior turbinates is as wrong as the man who did inferior turbinate work a short time ago and neglected the septum. The only criticism that I would make of Dr. Muncy's method is the same as Dr. Rice has made, that to remove the posterior end only is to make it probable that he will soon have

the work to do over again. If he removes the inferior border and then takes off the posterior end, he will find that he does a much cleaner piece of work.

DR. MUNCY, closing: I wish to thank all the gentlemen for their discussion of my paper. The case mentioned was in the hands of one of the best aurists of the community, with no result. The pathological picture found in this case, as the history shows, was a posterior end hypertrophy. I do not mean a large end hypertrophy with hypertrophy of the lower turbinate. It was not much larger than a pea. The description of the case in the paper was that, before shrinking, the turbinate was in no way in contact with either the septum or the floor. This paper is dealing with posterior end hypertrophy when found without other complications. As far as we could tell, there was no other pathological factor in the case.

In regard to Dr. Alexander's statement concerning shrinking and argyrol tampons, I would say that we never pack these posterior end cases. After operation we use no packing. The patient may ooze a little, but we do not wish to use packing, because if we do, when we take it away, the chances are that we get more bleeding than in the first instance; while a light packing seems to prolong rather than stop bleeding. The patient leaves the office with clean, free nasal passages.

If shrinking is done before you operate, often a mass that looks large will, on shrinking, be found pedunculated, and you remove the offending portion only and not more than is necessary.

I heartily agree with Dr. Rice and Dr. Phillips in what they have said, but they are dealing with another type of case. We have had in our office cases in which the aurist had removed the lower part of the turbinate, and had even taken off more than was necessary; but, for some reason, had left a portion of the posterior end to block the tube.

I hope I have made clear that this paper was to bring to your attention those cases where the posterior end hyperplasia was the cause of a constant catarrhal tubal defect, and where the rest of the turbinate may and does show little or no hypertrophy.

THE VALUE OF THE LABORATORY IN DISEASES OF THE EYE, EAR, NOSE AND THROAT*

JOHN G. WURTZ, M.D.,

Pittsburgh, Pa.

THE value of the laboratory as an aid in the diagnosis, prognosis and treatment of disease is now beyond dispute. This is an old saw, but it is expected of a laboratory man to repeat it. The uses to which the ophthalmologist, otologist, rhinologist and laryngologist put the laboratory are essentially the same as those of the internist, surgeon or other special or general practitioner in the medical arts. Diseases of the eye, ear, nose and throat are so interlocked that to specialize in one, necessitates more or less familiarity with all. These diseases may be purely local; may be local and causative of general or special reflex symptoms, or may be themselves secondary or local manifestations of systemic or other organic diseases. There are abnormalities of the eye, ear and upper air-passages which call for a knowledge of embryology, anatomy and physiology, or of the sciences of optics and acoustics to lay bare their exact nature. There are many clinical tests and instruments of precision in the skilled hands of the specialists, which are often quite enough aid in diagnosing the special diseases under discussion. However, it is when the condition in the eye, ear, nose or throat is a local manifestation of some systemic or organic disease that the specialist can make the best use of the laboratory to confirm the view gained by clinical study.

In ophthalmology the field of the laboratory is perhaps larger than it is in otology, rhinology and laryngology, because the eye is as much the window of the body as of the soul. Those diseases which may have optic manifestations are syphilis, tuberculosis, the anemias and leukemias, nephritis, diabetes, infections of pyogenic nature, both acute and chronic, and including rheumatism, endocrine disorders, tumors, the liver cirrheses, arterio-sclerosis, chemical toxemias; metabolic disorders, including gout, scurvy and rickets, nervous diseases, and upon closer analysis perhaps a few others.

*Presented at the annual meeting of the O., O & L. Society, Washington, D. C., June, 1921.

To mention briefly the application of laboratory procedures in eye conditions: The Wassermann is of value in determining whether the ulcer on the lid is a chancre or not; to establish the nature of the keratitis; to differentiate syphilitic from other affections of the sclera or choroid. Chemical examination of the blood will aid in determining whether the cataract is due to diabetes, and will be of aid in discovering whether the cause of the retinitis is nephritis or diabetes. Anemic conditions which affect the nerve, the retina or choroid, are diagnosed by the cytological examination of the blood. Pyogenic infections of a focal or general nature, which may affect the eye in several ways, are often discovered by a consideration of the leukocytes alone. Endocrine disorders affecting the eye can be frequently detected by a study of the basal metabolism or a carbohydrate tolerance test. Bacteriological studies of discharges determine the nature of the infections of the lids, lachrymal apparatus, orbit, conjunctiva and cornea. So by the proper laboratory methods the handling of all diseases of the eye is enhanced.

What has just been said of the eye is equally true of the ear, nose and throat, particularly as to the cytological and serological blood examinations and the study of pyogenic flora.

To leave the clinical side, so to speak, and consider in greater detail the laboratory studies associated with diseases of the eye, ear, nose and throat, one must mention first, bacteria. The conjunctiva is most commonly affected by the diplococcus of catarrh, gonococcus, pneumococcus, Koch-Weeks bacillus, influenza bacillus, staphylococcus, streptococcus and bacillus xerosis. The examination of the direct smear and the sowing of the discharge upon suitable culture media will establish the nature of the organism. Usually the examination of the smear is sufficient. Tubercle bacilli may be hunted in discharges, and early in luetic lesions the spirochete pallida may be found by dark field or stained preparations of scrapings from the sore. Deeper than the surface, chronic infections of the eye are best told by blood counts and frequently by cultures from distal pus-pockets of focal infections.

Affections of the external ear are usually bacterial in nature. Here, too, are of value the studies of both smears and cultures. The pyogenic organisms, staphylococci and streptococci are the usual offenders, and not infrequently higher bacteria classed

with yeasts and molds. In otitis media, both acute and chronic, may be found any of the pyogenic cocci, including meningococci, and should the lesion be secondary, one may find any pathogenic organism in the smear or culture, except tubercle bacilli and spirochete pallida.

Organisms affecting the nose and throat may be pathogenic bacteria, most important of which are staphylococci, streptococci, pneumococci, meningococci, diplococci of catarrh, influenza bacilli, diphtheria bacilli, the spirillum of Vincent's angina, tubercle bacilli, spirochete pallida and again, yeasts and molds. Except in the case of tubercle bacilli, spirochete pallida and the spiral organism of Vincent's angina, the best method of studying the bacteria of the nose is by culturing the discharges. Direct smears usually present such a variety of organisms that at times but little can be learned.

In this connection may be mentioned a fault of circumstances which detracts not a little from the epidemiological study of infections of the throat particularly. It is the tendency of public health laboratories to report that cultures are negative to diphtheria. Were it possible to secure a report of the organisms recovered from the cultures one would find that pneumococci, streptococci and other bacteria are frequent offenders and valuable aid would be at hand in the treatment of specific epidemics.

The serological examination of the blood is practically limited to the Wassermann reaction. Syphilis with all its ramifications must be known by the specialist and the Wassermann reaction is the most valuable single sign of the disease. It must be remembered that a single negative Wassermann does not exclude syphilis and that the degree or intensity of the reaction is no index of the severity of the infection.

In primary syphilis the Wassermann will be positive in from one to five weeks after the appearance of the initial lesion, and at the later date will be positive in about 85 per cent. of cases. Untreated secondary syphilis yields about 95 per cent. of positive Wassermans; while treatment will lower the percentage in proportion to the amount administered. The spinal fluid will react positively in about 20 to 30 per cent. of the cases of secondary syphilis. It is in tertiary syphilis that the Wassermann is of greatest value. When no treatment has been administered, the Wassermann will be found

positive in approximately 95 per cent. of cases. In those receiving more or less treatment, it is found positive in about 75 per cent. of cases. It may be generally said that the Wassermann is found positive in about 85 per cent. of all cases of tertiary syphilis. The reaction is fairly constant in nervous syphilis and in such cases may be negative in the blood and positive in the spinal fluid examination. This fact should be remembered.

A positive Wassermann reaction is frequently the only sign of latent syphilis, and in congenital syphilis the reaction will be positive in 95 per cent. of cases. In the last instance much depends upon the time the test was made. After the first year the percentage is found fairly high.

All things considered, the Wassermann reaction is very specific. When positive it usually means the presence of living spirochetes somewhere in the body, though the patient may seem clinically well. Though a positive reaction indicates that the patient is luetic, it does not necessarily mean that the lesion is syphilitic, because a syphilitic may have a carcinomatous ulceration of the larynx. Should such a condition not improve under anti-syphilitic treatment it does not detract from the value of the test. In cases in which one finds a weakly positive Wassermann with an ulcerating lesion, it is usually safe to say that the lesion is not syphilitic, because, as a rule, active lesions give strongly positive Wassermans. The test is a valuable guide to treatment, after one is familiar with the interpretation of the reaction of the serum against the various antigens. The three antigens mostly used are the alcoholic extract of luetic liver, the acetone insoluble lipoid of heart and the alcoholic extract of heart re-enforced with cholesterin. The strength of these antigens vary. Liver extract is the weakest and cholesterin antigen the strongest, so that when a Wassermann is negative with all antigens, it means that even the strongest antigen failed to inhibit hemolysis. Given a case in which all antigens yield strongly positive reactions and give to such a patient anti-syphilitic treatment, the first antigen to yield a negative result would be the liver antigen, the second to disappear would be the acetone insoluble lipoid antigen, and last the cholesterin antigen.

Cytological examination of the blood includes a total count of the red and white corpuscles, a differential leukocyte count and because of its close relationship to the erythrocytes, an estimation of

the percentage of hemoglobin. In infections and anemic conditions of the eye, ear, nose and throat the value and interpretation of the blood count are the same. It is of practical value to determine whether the anemia of the mucous membrane is purely local, or a part of a general anemia, and if the latter, the nature and extent of the blood loss. Many diseases have hemorrhagic diatheses as a part of their symptom-complex. In such cases there may be hemorrhage from the mucous membranes of the nose and throat and hemorrhage into the eye, and only by a blood count can one draw the proper conclusion.

Of the cytological blood examinations the total and differential leukocyte counts are the most important. Incidentally, the inspection of the stained specimen will reveal, to some extent, the nature of the anemia. A good practice, however, is the estimation of the hemoglobin per cent. This is a simple procedure consuming but little time and determining whether or not an enumeration of the erythrocytes is indicated. A general rule to follow is that when the hemoglobin percentage is below 70 it is well to make a red cell count. Above this their number will be relatively normal, because in anemic states the hemoglobin is the first constituent of the blood to disappear and the last to reappear. In inflammatory conditions the attention should be directed toward the leukocytes, because these cells are the most prominent in this reaction. Of the leukocytes, the polymorphonuclear neutrophiles are the chief, particularly in acute processes. These cells are the first to emigrate to the affected part and early are the only ones found. Coincident with this migration is a reproduction of these leukocytes by the bone-marrow, in numbers much greater than is ordinarily necessary for the replacement of those destroyed in the natural wear and tear of the body's activities. This leukocytosis is usually proportional to the quality and quantity of the etiological factor, except in cases in which the local or general injury is so severe that a depression of the leukopoietic elements results.

Various substances have their influence upon and call forth different varieties of leukocytes. Pyogenic organisms call forth polymorphonuclear neutrophiles; intestinal parasites, eosinophiles; typhoid bacilli may stimulate the formation of transitional cells and tubercle bacilli, lymphocytes. Since pyogenic organisms are the chief offenders in the diseased conditions here considered, it will be

understood that the polymorphonuclears are the important cells. It may be generally stated that the greater the number of these cells, the more acute the condition; while the mononuclear cells or lymphocytes speak for chronicity. One must emphasize the fact that fully as important as the total count is the determination of the numbers of the different varieties of white cells, because a comparison of the percentages of the different varieties compared with the total count yields more information than a consideration of either alone. The percentage of the various white cells represents the severity of the infection; while the total count is an index of the patient's power of resistance. The total leukocyte count and the percentage of the polymorphonuclear cells increase in proportion, in a moderate infection with good resisting power on the part of the patient. Should the polymorphonuclear percentage be increased to a notably greater extent than is the total count, no matter how low the count, one may infer either very poor resistance or a very severe infection. A percentage of polymorphonuclears over 80 usually means pus.

A simple laboratory measure of prognostic value is the estimation of the coagulation-time of the blood, particularly before nose and throat operations. When an operation is imperative, and the patient's clotting time is delayed; or, should the operation be extensive, or the patient anemic, a blood transfusion should be in mind. This may be either pre- or post-operative; but in any event the laboratory is absolutely necessary to determine the blood-group of the patient so that a suitable donor may be secured. No transfusion should be done without the preliminary tests to determine the compatibility of the bloods, even should the same donor be used in cases of repeated transfusions.

There are certain clinical tests originating in the laboratory which should be thought of as aids in diagnosing and prognosing eye, ear, nose and throat diseases. These are the Schick test to determine the immunity against diphtheria and the Von Pirquet to determine the presence of tuberculosis. Both are skin reactions and both have their greatest value when practiced upon children. Urinalysis is so common that time will not be given to a consideration of it, only to state that urine is so variable in both health and disease that one must use care in interpreting the results.

More accurate methods than urinalysis have been devised to determine the body's state, and these are the studies of the chemical

constituents of the blood. There is no use comparing the urine and blood, because the blood alone gives all the necessary information; besides such a procedure is complicated and the time factor in the collection of the specimen is a nuisance and impractical even in a hospital. Blood chemistry is valuable in conditions in which the older methods of blood examination give little information, as nephritis, diabetes, endocrine disorders and in differentiating gout from arthritis.

The blood constituents studied are chiefly the non-protein nitrogen, urea nitrogen, uric acid, creatinine, sugar, carbon dioxide combining power of the plasma, cholesterol and chlorides. Creatin, amino-acid nitrogen, ammonia nitrogen and the basal metabolism are sometimes studied. The last is of particular value in metabolic disorders and in disturbances of the ductless glands, where one may find an increased metabolic rate or a diminished rate, according to whether there is a hyper or hypo function of these internal secreting glands.

Renal insufficiency may be studied by an estimation of the uric acid, urea and creatinine of the blood. Creatinine is the easiest eliminated by the kidneys and uric acid the most difficult. In renal insufficiency the uric acid is the first substance to be retained in the blood, urea next and only late is the blood creatinine raised to any great amount. These facts enable one to determine the degree of functional disturbance associated with interstitial nephritis. All chronic and some acute nephrites have an acidosis as shown by the carbon dioxide combining power of the blood plasma. Parenchymatous nephritis presents a comparatively small nitrogen retention, but a rather significant increase of the blood chlorides.

Endocrine disorders, besides changes in the basal metabolism rate, give a change in carbohydrate tolerance; hyperactivity giving an increased tolerance and hypoactivity a decreased tolerance.

Arthritis, uncomplicated with nephritis, presents no notable change in the blood's chemical constituents; whereas gout is associated with an increase of blood uric acid and no nitrogen retention. Should arthritis be associated with kidney involvement, the uric acid retention, which may be found, is associated with urea retention also.

Aside from the Wassermann test the spinal fluid may give valuable information, especially in diseases of the eye and ear. The

determination of the globulin content, the total and differential cell-count and bacteriological study determine the nature of the meningitis, should one exist. The spinal fluid examination is frequently negative or unsatisfactory in tuberculous meningitis; while in other known infections the examination usually gives aid. In poliomyelitis and lethargic encephalitis the spinal fluid findings depend upon the stage of the disease. In these diseases the changes are mostly in the nature and number of cells found in the cerebro-spinal fluid. The colloidal gold test will be mentioned only to say that it has its greatest value in syphilis and paresis.

To close it is well to repeat two facts: The satisfactory laboratory examination depends upon the reception of a satisfactory specimen, and the laboratory findings are things to be added to the clinical history. In diseases of the eye, ear, nose and throat the laboratory is an asset, but there is no disease affecting these parts that can be diagnosed by the laboratory findings alone, save, perhaps, the so-called blood diseases.

DISCUSSION ON THE PAPER OF DR. WURTZ.

S. B. MOON, Pittsburgh, Pa.: This paper is so excellent and covers the field so thoroughly that it is very hard to make any discussion of it. I might say, however, that to me the most important use of laboratory tests is in the diagnosis of obscure cases of iritis, corneal ulcers, acute conjunctivitis and in optic nerve conditions. I can recall two cases of iritis that proved to be luetic and responded in two or three weeks to salvarsan treatment—of course, under the additional use of atropin, when otherwise these cases, under the ordinary mercurial treatment, would probably have had a duration of six weeks or two or three months. I consider that a great advantage in the treatment of these cases of iritis.

I. D. METZGER, Pittsburgh, Pa.: I want to tell you that Dr. Wurtz is the cherished pathologist at the Pittsburgh Homœopathic Hospital; and that when we refer work to Dr. Wurtz, we do it with the utmost confidence. I think you will agree with me in this after hearing his paper of this morning. Our laboratory has stood for the best things for a number of years and we are proud of it.

I want to speak along that line, more than any other. In the State of Pennsylvania, in practically every laboratory in which there

are internes, we have good pathologists who are full-time men and have been especially trained in that kind of work. They are teachers of the internes. I think that there ought to be available to every specialist, regardless of the line of work which he follows, a pathologist capable of doing accurate work. It is an asset to his diagnosis and treatment. The pathologist should be a full-time man, and one especially trained, so that one may depend upon his judgment, his findings and suggestions. Unless we are capable of doing the work ourselves, we are handicapped, if we do not have confidence in the one who gives the interpretations. In such a case, we would naturally make few requisitions on the laboratory for work. Moreover, our pathologist ought to be one of our own group of staff men.

This leads me to the thought that we should do better teamwork in medicine. The fellow who tries to do the whole thing himself will not get very far in modern medicine, and the one who tries to do his special work independently of any other fellow will not get far; on the other hand, the one who best correlates his work with that of specialists in other lines, thus evolving his diagnosis and his treatment, is securing to his patients the best possible service. We ought to encourage team-work in all departments of medicine. We ought to forestall, by means of the laboratory, a number of diseases pertaining to the eye that are continually impending. Gonorrheal ophthalmia ought not to be allowed to run the virulent course which some of us have known in former days. Syphilitic iritis, already referred to by Dr. Moon, ought not to continue to do the damage that it formerly did in eyes. There are other eye-conditions which you know as well as I do, no doubt better, that ought to be forestalled. Interstitial keratitis, however, is a disease that probably could not be limited. When it has once manifested itself, neither the Salvarsan nor any anti-syphilitic treatment can prevent subsequent manifestations in the other eye. There are many conditions in which our laboratory men can be of great aid to us in our diagnosis. Among these might be mentioned conjunctivitis, tabes dorsalis and retinitis albuminurica. I want to thank Dr. Wurtz for coming here and reading this paper.

ALFRED LEWY, Chicago: This paper is an excellent demonstration of the necessity of the specialist being possessed of considerable knowledge of general medicine. He has to know enough

at least to be able to interpret the laboratory findings in connection with the clinical symptoms and not expect the laboratory to do all the diagnostic work.

I would like to ask Dr. Wurtz if it has been his experience that the blood count has not been a reliable guide in mastoid infections.

I do not want to prolong this discussion unduly, but I want to make a motion that the Society extend a vote of thanks to Dr. Wurtz for coming to the meeting and giving us this most excellent presentation of the subject of the value of the laboratory.

The motion was seconded and carried by a rising vote.

DR. WURTZ, closing: There are three things I should like to mention, which I omitted from my paper: urinalysis, previous to operation; the study of tumors; and the making of vaccines in diseases of the eye, ear, nose and throat.

Regarding diabetes: While the acetone is a factor, it must be considered that a study of the blood sugar is more important than an estimation of acetone in the urine. After an individual has had diabetes for some time, it will take a higher percentage of sugar in the blood before any will be eliminated by the kidneys. Such a person has a raised sugar threshold.

Therefore, so far as the clinical application to an operation for cataract in diabetes goes, I cannot say, because I am not familiar with this phase of the matter; but I can remind you of the fact that the blood sugar may be very high and the patient may still have no sugar in the urine.

Dr. Lewy mentioned the interpretation of laboratory results. It is the wish of laboratory men that they should be taken as consultants, because, especially in large institutions, the laboratory man is nothing more than a technician:

“Theirs not to reason why;
Theirs but to do or die,”

that is the attitude taken in a good many instances. “You tell me how many leukocytes are there, and that is all you have to do.” That is wrong. If the laboratory worker is taken as a consultant, he will often give valuable information and assistance.

So far as the unreliability of the blood count in mastoid dis-

ease is concerned, I would say that when we have infection we almost always have an increase in the number of leukocytes, and an increase in the polymorphonuclear leukocytes in proportion to the severity of the infection. I think I remember once reading that such mastoid infection travels inward and affects the meninges, or becomes a general infection. In such blood-invasions the leukocyte count is altogether changed, and you cannot make the same deduction as you could if the conditions were localized in the mastoid. In simple mastoid cases the leukocyte count is valuable; but when meningitis complicates the case there is a septic picture in the blood-stream.

PROFESSOR ERNEST FUCHS, FAMOUS AUSTRIAN OCULIST, PRESENTED WITH INSTRUMENT.—While in St. Louis recently, delivering a series of lectures, Professor Ernest Fuchs, the World's Master Oculist, expressed much interest in an instrument used by local oculists, a small lid-lifting device which is used to expose the retro-tarsal fold. This instrument, which is a product of the A. S. Aloe Company, is a most ingenious instrument. At a gathering of local oculists at the University Club, Mr. Albert S. Aloe presented the instrument, engraved with the professor's name, to the noted professor, stating that he did so with the compliments of his firm, because they had heard of the professor's interest in this new instrument used by local oculists and finding favor generally among the profession in America.

A CASE OF PNEUMOCOCCIC TONSILLITIS WITH JUGULAR THROMBOSIS

WILLIAM H. PHILLIPS, M.D.,

Cleveland, Ohio

MARY B., aet. 32. Large, well-built woman, college graduate, athletic. No history of repeated attacks of tonsillitis. Previous health always good, except that her brother stated that for some time past she had not seemed so well to him as was her usual wont.

She developed a cold early in January this year, following a skating party in which she broke through the ice and became wet. On January 8th, Dr. Frederick Aeberlie was called to see her for a right tonsillitis. At this time the tonsil was, as Dr. Aeberlie expressed it, "retracted and covered by a moderate amount of dirty, grayish membrane."

A culture for Kleb's Loeffler was taken and ten units antitoxin given pending the laboratory report. Two days later, a negative report having been received from the laboratory in the meantime, a swelling appeared in the supra-tonsillar space. Incision released a small quantity of thick yellow pus. There was no relief such as is usually experienced following the incision of a peritonsillar abscess, but on the other hand the temperature began to rise and the patient to take on the appearance of a rapidly increasing sepsis.

Thursday, January 12th, she was sent to the hospital, and the same evening I saw her, in consultation with Dr. Aeberlie. At this time her temperature was 105, pulse 116.

She was somewhat delirious, although answering questions intelligently; there was pronounced cyanosis of the face, lips and fingers; she was very restless, although complaining of no pain; she could open her mouth easily and swallow without marked discomfort; pressure over the tonsil evacuated some thin pus from the opening above, and also expressed considerable from the tonsil crypts themselves.

Under a short general anaesthetic, the scissors were pushed in behind the tonsil and spread, followed by a thorough explor-

CASE OF PNEUMOCOCCIC TONSILLITIS WITH JUGULAR THROMBOSIS

ation by the gloved finger, with the evacuation of another small pus cavity. The entire cavity behind the tonsil was then packed lightly with iodoform gauze.

The white count at this time was 22,000. Polys. 89 per cent. Spinal puncture showed clear fluid with pressure of 6 m.m. Hg.

By midnight her temperature had fallen to 99. The next morning there was a sharp chill, with vomiting and involuntary bowel action, followed by a rapid rise to 105.8, pulse 104, respiration 20. The gauze was removed and the tonsil space looked clean with little or no edema about the tonsil or pillars. Blood culture was made, also slide and culture from the tonsil. In the meantime 10 c.c. Strep. serum were given intra-muscularly. Medication was under the charge of Dr. Aeberlie, and she was given Digalen in $\bar{3}$ 11 doses, b.i.d., and Morph. 1/6, Hyoscin. 1/250.

During the day the temperature dropped to 102.4 to rise again at midnight to 105.6; two chills having been recorded. At this time a tentative diagnosis of jugular septic thrombosis was made, but as her condition was apparently good, her blood pressure having come up from 100-52 to 114-50, and as she was more quiet, we decided to await laboratory reports.

The next morning her temperature reached at 8 A. M., 100.4, her white count reported 18,680, Polys. 72 per cent.—the slide showed a gram positive diplococci with a long thick bacillus. That night at midnight her temperature had risen again to 105.6, following a slight chill. The following day blood culture was reported negative. She showed some slight infiltration at the angle of the jaw, and it seemed possible to feel a cord in the line of the jugular. Pulse at this time varied from 120-144, respiration from 16-26.

A positive diagnosis was made of jugular thrombosis and operation decided upon. She was given 50 c.c. P. D. pneumococcic serum and prepared for operation for Sunday morning. Just before operation the patient coughed and expectorated a large mouthful of pus and blood, and thereafter stated she felt much better. A recount showed whites 37,900, Polys. 82 per cent. The laboratory identified the infection as pneumococci, but it was not typed. Feeling that possibly after all, the diagnosis might be wrong and that possibly a deep abscess behind the posterior pillar had been overlooked and ruptured spontaneously, it was decided to delay twelve

hours and await developments. The temperature, however, continued high, the patient rapidly failed and never after this was it possible to consider operation. She became more delirious, pulse thready and with a steadily mounting temperature, finally dying on the 16th.

A second blood culture made just after one of her chills was also negative. Only a very limited post-mortem was allowed. On drawing aside the sterno-mastoid, pus welled up into the opening. The jugular was matted down and thrombosed throughout its entire extent. On slitting it, it was found filled with foul-smelling pus and a very adherent purulent thrombus was attached to its internal wall.

Whether the abscess first opened was independent of the thrombosis, or whether it was the result of a perforation of the necrotic jugular wall, could not be ascertained.

REMARKS.—Although I have seen several jugular thromboses associated with lateral sinus thrombosis and middle ear disease, it has never before been my fortune to meet with a case of primary jugular thrombosis, associated with tonsillitis. When the symptoms of this case pointed almost unerringly to the jugular as the seat of infection, I ran through my year books for the last ten years to see what cases had been recorded, and found but one.

G. Goodman, *Annals of Otology, Rhinology and Laryngology*, June, 1917, reports a case of primary jugular thrombosis, due to tonsil infection in a woman of 35. She had been having a follicular tonsillitis for ten days previously. Five days before she had had two or three chills, followed by profuse perspiration and accompanied by vomiting. A tender swelling was noticed on the left side of the neck. Temperature 104. Shortly after admission to the hospital the chill was repeated, followed by temperature 107.2. She became delirious. White count 12,600; Polys. 84 per cent. An induration extended along the anterior border of the sterno-mastoid surrounded by considerable infiltration.

The vein was exposed throughout its entire length and ligated near the clavicle. The thrombus was found at the entrance of the facial vein. By the fifth day, after operation, the temperature had become normal, and the patient made a good recovery.

Goodman refers to one other similar case reported in *Surg. Gyn. and Obstet.*, January, 1912, by J. W. Long.

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AN UNUSUAL EPIDERMAL AND CONNECTIVE TISSUE GROWTH OF THE TYMPANIC CAVITY AND MASTOID

JOSEPH V. F. CLAY, M.D.

THE case to be briefly related presented clinical and pathological interest. Clinically, it was simply a chronic suppurating ear with polyp formation, the character of which was unusual in a child of this tender age. Pathologically, grossly we felt that we had encountered a dermoid. Our disappointment in this respect was bitter, but the pathologist said "No." Radical operation alone enabled us to fathom the tumor-like mass encountered in the external canal, and likewise to produce a complete cure.

M. H., female, age 21 months, was referred to us by Dr. H. E. Longsdorf, of Mount Holly, N. J., with the following history: A few months ago the child had acute tonsillitis, followed promptly by a swollen gland in the left side of the neck just below the ear. The child spent several days of pain, followed by the appearance of discharge from the canal. Dr. Longsdorf did not see the child for several days, but at his next examination he noted a growth in the external auditory meatus of the left ear. He removed some of this growth, but quickly discovered that it was unusual both in its consistency and size.

At our first examination we found a swollen gland below and in front of the ear. The left external auditory canal presented a mucopurulent discharge and a growth completely filling the external canal. This growth was polyp-like in appearance, but did not bleed readily and was undoubtedly quite large as evidenced by exploration with a probe. There were no evidences of involvement of the mastoid.

Under a general anaesthetic we attempted the extraction of the mass, but the growth resisted wire, up to No. 4, which was as strong as we cared to use in the canal. Only a small fragment of the growth was removed. It was undoubtedly a very fibrous polyp. We advised radical operation, but this was refused. Four months later the child was again brought to us. This time we were able to deliver a larger portion of the mass and we were satisfied that

our former advice for radical operation was to be repeated. This time it was accepted, and two weeks later we performed a radical mastoid operation. The mastoid antrum contained a fluid on the surface of which a greasy pellicle floated. In the depths of the antrum could be seen a firm, whitish mass which pitted upon the application of the point of a probe. It completely filled the antrum and was seen to pass into the aditus ad antrum. By making traction on the growth presenting in the external canal, we could see the mass in the antrum move, and by reversing the traction, making same from the antrum side of the growth, we were able to see movement of the mass in the external canal. We concluded that the tumor extended from the canal through the aditus ad antrum into the antrum. The radical operation was completed, the posterior canal wall being removed to the floor of the aditus.

We now attempted to remove the mass, but our efforts were futile. It was firmly adherent to the walls of the external canal and had to be separated from the membranous canal by blunt dissection. The outer covering of this mass was epidermis, on the surface of which very fine hairs were seen. We did not section it at once, but submitted it to Dr. S. W. Sappington for histological examination.

The tumor was shaped very much like a large dried lima bean, with perfectly smooth outer covering of epidermis. One side presented some irregularity where the former portion had been excised. Dr. Sappington cut the growth transversely and reported that it showed a layer of stratified epithelium with hair follicles such as seen in skin epithelium. Beneath this was connective tissue and under this a layer of cartilage. The center contained connective tissue that looked as though it might be osseous, but definite evidence was lacking. The tissues all looked quite normal, and ordinarily one would say that it was a section of the external auditory canal. No evidence of tumor was present.

That this was not the external canal we know, for we finished the operation with an intact external membranous canal and performed a plastic flap operation from the membranous posterior wall. The child made an uneventful recovery.

This case was examined one year after the operation and presents a clean tympano-mastoid cavity, without discharge, and at no time has there been any recurrence of the growth.

"CAMP ROOSEVELT—BOY BUILDER"

INASMUCH as the furtherance of health is one of the prime reasons for the summer camp, it is well worth while to place emphasis upon the health conditions surrounding the camp. This has been done at Camp Roosevelt, the national summer educational-training camp for boys, conducted by the Chicago Board of Education. The camp, which for the past three summers has been located in Michigan, will move this coming summer to its permanent site near La Porte, Indiana, 65 miles from Chicago. The health of the boys who enroll for instruction there is carefully safeguarded.

Through the co-operation of the city health department of Chicago and the city health department of the city nearest the camp, a complete health survey, not only of the immediate camp site, but of the surrounding country was made before the present camp location was definitely decided upon.

The committee on the selection of the site wanted to be certain regarding such things as water supply, bathing facilities, drainage, sewage disposal, freedom from mosquitoes, and the like, before bringing a thousand boys from Chicago into camp for a summer of recreation, health training, and education.

One of the requisites of a healthy camp is the right kind of soil. At Camp Roosevelt, the soil is sandy and no stagnant water ever collects. This condition of the soil also makes sewage disposal easy. The sandy soil which dries quickly, even after a heavy rain, eliminates the necessity of floors in tents.

Next, after considering the type of soil, the health-survey took up the question of water-supply. Spurning the opportunity of securing a supply from the open lake, a full supply was arranged for from an artesian well six hundred feet deep, and with no chance of surface contamination. Shallow wells are used to supplement this supply, the water being subjected to chemical tests for purity at least once a week.

The food of a summer camp, and the storing of food, are matters of prime importance, both as to source and handling. At Camp Roosevelt these problems have been carefully solved, and the manner of handling these important branches meets with praise and commendation by all who inspect the kitchens.

Next to food in importance comes the matter of exercise. Careful supervision of exercise is one of the important steps in the

ideal summer camp. Boys, in particular, are apt to overdo, and they must be watched.

At Camp Roosevelt the boys are under the supervision of physical directors from the Chicago schools, who see that they do not overtax their strength. Good games of all kinds, military drill, recreative pastimes and the like, are encouraged. A daily swim in the lake is a part of the routine, but care is exercised to prevent too much activity. Opportunities for rest punctuate the day's program, so that nightfall finds the boys ready for a sound sleep, but not too tired to sit for a half-hour, or so, for an evening lecture, the moving pictures, or other forms of entertainment which provide an interesting feature of camp-life.

It has been possible at this camp to maintain a somewhat more elaborate health-program than is possible in smaller camps, but the principle of caution can be observed anywhere. Boys coming into the camp are given an examination as to their physical fitness and possible breakdown under camp routine. A large cottage, shaded by oak trees, has been converted into a hospital, and it is kept in readiness for first-aid cases. Sick-call is one of the daily items of routine, but 99 per cent. of the cases responding to the sick-call are of a minor nature which can be taken care of with simple measures. The First Aid Chapter of the American Red Cross of Chicago maintains three physicians and a nurse at the camp at all times, to take care of emergencies and to teach the boys how to apply first-aid and emergency measures. The general health rules which are fully observed preclude any serious difficulties, and about the most dangerous troubles brought to the attention of the medical staff are sunburn, blistered feet and other minor afflictions of camp. As far as that goes, a frequent foot-inspection is held to prevent any serious foot-trouble or infection.

One other point, and one which has a direct bearing on the health of the camp, is the matter of personal morale. The healthy camp must have a healthy moral tone, and this is again particularly true with reference to a camp for boys. This part of the work at Camp Roosevelt is entrusted to the officers and instructors in charge, and to the Y. M. C. A. secretaries. The secretaries supply speakers, music, moving pictures, stationery, books, laundry service, and the like—all helpful forms of service, which go far to make camp life more enjoyable and more wholesome.



CAMP ROOSEVELT

CAMP ROOSEVELT—BOY BUILDER

Not only do the boys at Camp Roosevelt enjoy good health while there, but they take back to their homes the lessons learned in camp. Toothbrush drill, daily bathing, moderation in eating, are just a few of the things that make an impression upon the none-too-careful new cadet.

While primarily a Chicago enterprise, the camp is not confined to Chicago boys alone. Any clean-cut boy ten years of age and over is eligible for attendance. The small fee which the boy pays enables any healthy, husky boy who is willing to work a bit to partake of its many opportunities. The financial backing is secured by public-spirited Chicago business men.

The founder of the camp, Major F. L. Beals, is a student of boy psychology, and a lover of boys. He occupies during the winter months the position of Professor of Military Science and Tactics and Supervisor of Physical Education in the Chicago public high schools. This enables him to study at close range the problem of building better boys. That his plan for developing boys is meeting with success is proven by the constantly increasing interest on the part of educators and the public at large, who are keen spectators of the progress going on at the camp.

Major Beals' office is at the Chicago Board of Education, 460 South State Street. Full particulars regarding the camp may be procured from him. It would be well for parents of growing boys to interest themselves in this splendid opportunity for boys.

NEW BOOKS

DISEASES OF THE EYE.—A Handbook of Ophthalmic Practice for Students and Practitioners. By George E. deSchweinitz, M.D., LL.D., Professor of Ophthalmology in the University of Pennsylvania. Ninth Edition, Reset. Octavo 832 pages, with 415 text-illustrations and 7 colored plates. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, \$10.00 net.

The reputation of Dr. deSchweinitz as an ophthalmologist is sufficient guarantee of the accuracy and completeness of anything he may undertake. His handbook may be fairly conceded to be the best that is written in the English language, and can be recommended to both students and specialists in ophthalmology. For the general practitioner who may not feel inclined to own more than one book on a particular subject, he may safely invest in Dr. deSchweinitz's handbook of ophthalmic practice.

G. W. M.

LENTICONUS, WITH A REPORT OF TWO CASES.—George W. Mackenzie, *Pennsylvania Medical Journal*, September, 1921, calls attention to the small amount of space allotted to the subject of "Lenticonus" by the average textbook writer. The first case of lenticonus reported was that by Webster in 1875. The same case was also studied by Knapp. Many theories have been advanced as to the cause of the condition. The tendency now is to support the contention of Meyer that the whole process is founded on a pathological basis.

The average case of posterior lenticonus is one in which the vision has been poor, especially for distance. The vision is slightly improved with a minus lens, but is considerably less than is generally obtained in a case of uncomplicated myopia. There seems to have occurred a slightly greater number of unilateral than bilateral cases. External examination of the eyes, as a rule, shows a grayish pupillary reflex suggestive of cataract, and not infrequently these patients report that their case has previously been diagnosed as cataract. However, with oblique illumination and close scrutiny the lens is found to be transparent. There is also an absence of the iris shadow that is quite definite in immature cataract. Divergent strabismus is of frequent occurrence. The ophthalmoscopic picture is of interest. With either the plane or concave mirror and a plus 4 D lens at about ten inches from the patient, that peculiar changing shadow is observed which has been variously described as a "drop of oil in water," and "*Schatten-phenomena*" (shadow phenomenon). (Perhaps a good simile is that of the effect of gazing through a rifle barrel and the peculiar changing of the shadows with the change of position.)

Two cases are cited by the writer. The first one is a case of posterior lenticonus which has probably begun between the patient's thirty-fifth and sixty-second years, advancing rapidly from the fifty-seventh to the sixty-second year; then with little or no change, from the sixty-second to the seventy-second year.

The second case is one of anterior lenticonus. At first it was questionable whether the case was one of anterior lenticonus or keratoconus. Since the use of Placido's disc showed no change in the center or size of the white circles reflected from the cornea, keratoconus was excluded.

Attention is called to the bibliography, which is most complete.

W. G. S., JR.

TESTING NASAL RESPIRATION.—A convenient method of roughly estimating the patency of the nasal passages is to hold the glass of the head mirror under the nose, noting the fogged zone produced by the moisture of the breath. The principle is used in the manufacture of a recorder of nasal respiration, but the simple procedure described is decidedly more practical and convenient.

D. M.

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Journal of Ophthalmology Otology and Laryngology

Vol. XXVI

JUNE, 1922

No. 6

Editorial

PROGRAM

THIRTY-FIFTH ANNUAL SESSION OF THE O., O. & L. SOCIETY

HOTEL DRAKE, CHICAGO, ILLINOIS

JUNE 19TH, 20TH, 21ST AND 22ND

Monday, June 19th, 1922

FIRST SESSION—9 A. M., HOTEL DRAKE

Call to order.

Adoption of Program.

Appointment of Committees.

(a) Attendance.

(b) Nomination

(c) The Press.

Business Session:

1. Reports of Officers.

(a) Report of Secretary.

(b) Report of Treasurer.

(c) Report of Necrologist.

2. Report of Censors. Election of New Members.

3. Report of Committees.

4. Unfinished Business.

5. New Business.

President's Address.

Appointment of the Committee on the President's Address.

PAPERS

1. "Eye and Ear Symptoms of Sleeping Sickness."

By Dr. George W. Mackenzie.....Philadelphia, Pa.

Discussion by Dr. C. Gurnee Fellows.....Chicago, Ill.

Dr. F. L. Johnson.....Detroit, Mich.

2. "A Study of Serum Therapy and Its Relation to Oto-
Laryngology."

By Dr. George B. RiceBoston, Mass.

EDITORIAL

- Discussion by Dr. John S. Gaines, Jr.....New York
Dr. H. C. King.....Washington, D. C.
3. "Sphenopalatine Ganglion Headaches."
By Dr. Charles L. RumseyBaltimore, Md.
Discussion by Dr. J. I. Dowling.....Albany, N. Y.
Dr. F. B. MacMullen.....Detroit, Mich.
4. "Demonstration of the Gullstrand Slit Lamp."
By Dr. Harry S. Gradle.....Chicago, Ill.

Monday, June 19th, 1922

SECOND SESSION—2 P. M., HOTEL DRAKE

LARYNGOLOGY

Bureau Chairman—Dr. Harold A. Foster, New York, N. Y.

5. "Throat and Ear Symptoms in Rheumatic Cases."
By Dr. Douglas Macfarlan.....Philadelphia, Pa.
Discussion by Dr. Alfred Lewy.....Chicago, Ill.
Dr. E. S. Hallinger...Haddon Heights, N. J.
6. "Malignant and Non-Malignant Tumors of the Nose and Throat."
By Dr. C. E. TeetsNew York, N. Y.
Discussion by Dr. J. I. Dowling.....Albany, N. Y.
Dr. Joseph V. F. Clay.....Philadelphia, Pa.
7. "Tumors and Growths of the Mouth and Throat, Handled by Diathermia."
By Dr. Frank Novak.....Chicago, Ill.
Discussion by Dr. Rollin Stevens.....Detroit, Mich.
Dr. Howard Plank.....Chicago, Ill.
8. "A Simple Method of Tying Ligatures of the Throat."
By Dr. A. R. GrantUtica, N. Y.
Discussion by Dr. Frank A. Howland.....Adrian, Mich.

OPHTHALMOLOGY

Bureau Chairman—Dr. W. D. Rowland, Boston, Mass.

9. "Keratitis Neuroparalytica."
By Dr. H. S. Weaver.....Philadelphia, Pa.
Discussion by Dr. J. V. F. ClayPhiladelphia, Pa.
Dr. D. W. Weaver.....Greensburg, Ind.
10. "Synergism of the Extra-Ocular Muscles Shown by the Ophthalmotrope."
By Dr. George A. SuffaBoston, Mass.
Discussion by Dr. W. D. Rowland.....Boston, Mass.
11. "Unusual and Overlooked Causes for Refractive Anomalies."
By Dr. James A. CampbellSt. Louis, Mo.
Discussion by Dr. George A. Shepard.....New York
Dr. W. J. Blackburn.....Dayton, Ohio

Tuesday, June 20th, 1922

THIRD SESSION—9 A. M., HOTEL DRAKE

OPHTHALMOLOGY, CONTINUED

Bureau Chairman—Dr. W. D. Rowland, Boston, Mass.

12. "Tumors of the Conjunctiva, Report of a Case."
By Dr. Alva Sowers.....Chicago, Ill.

EDITORIAL

- Discussion by Dr. Frank O. Nagle.....Philadelphia, Pa.
 Dr. Douglas Macfarlan....Philadelphia, Pa.
13. "Homœopathic Therapeutics in Ophthalmology."
 By Dr. George A. ShepardNew York
 Discussion by Dr. H. S. WeaverPhiladelphia, Pa.
 Dr. Dean W. Myers.....Ann Arbor, Mich.
14. "Something About Cataracts."
 By Dr. C. Gurnee Fellows.....Chicago, Ill.
 Discussion by Dr. G. DeWayne Hallett.....New York
 Dr. Joseph Sternberg.....Boston, Mass.
15. "Neglected Eye Conditions."
 By Dr. Henry L. Gowens.....Philadelphia, Pa.
 Discussion by Dr. C. R. Beeman.....Grand Rapids, Mich.
 Dr. Stephen Cattley.....Ogdensburg, N. Y.
16. "Nystagmus."
 By Dr. Francis G. Hulbert.....Chicago, Ill.
 Discussion by Dr. Ralph I. LloydBrooklyn, N. Y.
 Dr. Seymor B. MoonPittsburgh, Pa.
17. "Cataract Extraction, Operation of Choice."
 By Dr. G. E. G. NortonNew York
 Discussion by Dr. C. Gurnee FellowsChicago, Ill.
 Dr. Fred LewisBuffalo, N. Y.
18. "Sympathetic Ophthalmia."
 By Dr. Neil BentleyDetroit, Mich.
 Discussion by Dr. Dean MyersAnn Arbor, Mich.
 Dr. Wm. McLeanNew York, N. Y.
19. "Congenital Absence of External Rectus." Report of Two Cases.
 By Dr. J. J. WynnLouisville, Ky.
 Discussion by Dr. Wm. McLeanNew York, N. Y.
 Dr. Calvin E. Williams ..New York, N. Y.
20. "Strabismus, Etiology and Treatment."
 By Dr. W. E. BoyntonChicago, Ill.
 Discussion by Dr. George A. SuffaBoston, Mass.
 Dr. William H. PhillipsCleveland, Ohio
21. "Heterophoria, Study of 300 Cases."
 By Dr. Edwin S. MunsonNew York
 Discussion by Dr. Albert E. CrossWorcester, Mass.
 Dr. Fred L. Johnson.....Detroit, Mich.
22. "A Case of Glaucoma."
 By Dr. Leroy ThompsonChicago, Ill.
 Discussion by Dr. I. O. DenmanToledo, Ohio
 Dr. Wm. M. MuncyProvidence, R. I.

Tuesday, June 20th, 1922

FOURTH SESSION—2 P. M., CLINICAL SESSION
 COOK COUNTY HOSPITAL

23. "Tumors and Growths of the Mouth and Throat, Handled by Diathermia."
 By Dr. Frank NovakChicago, Ill.
24. "Labyrinth Operation."
 By Dr. George W. MackenziePhiladelphia, Pa.
25. "Ophthalmoscopy."
 By Dr. George SukerChicago, Ill.

EDITORIAL

Tuesday, June 20th, 1922

FIFTH SESSION—8 P. M., HOTEL DRAKE MEDICAL ECONOMICS

Bureau Chairman—Dr. Dean W. Myers, Ann Arbor, Mich.

26. "The Business Side of Medicine and Surgery."
By Dr. George W. RobertsNew York
27. "Recompense."
By Mr. George Burke, Attorney-at-Law...Ann Arbor, Mich.
Discussion by Drs. Hazeltine, Denman, Bentley, LaForge.

Wednesday, June 21st, 1922

SIXTH SESSION—9 A. M., HOTEL DRAKE

Business Session.

Report of Committees:

- (a) Attendance.
- (b) Nominations.
- (c) The Press.
- (d) President's Address.
- (e) Special Committee.

Unfinished Business.

New Business.

Election of Officers.

OTOLOGY

Bureau Chairman—Dr. Gilbert J. Palen, Philadelphia, Pa.

28. "A Case of Brain Abscess Following Chronic Suppurative Otitis Media."
By Dr. W. J. BlackburnDayton, Ohio
Discussion by Dr. Burton Haseltine.....Chicago, Ill.
Dr. Roy C. Cooper.....Pittsburgh, Pa.
29. "Two Ear Cases."
By Dr. Theo. E. Miller.....Chicago, Ill.
Discussion by Dr. G. R. LindquistChicago, Ill.
Dr. George WebsterChester, Pa.
30. "Thrombo-phlebitis of the Cavernous Sinus."
By Dr. George J. AlexanderPhiladelphia, Pa.
Discussion by Dr. George W. Mackenzie..Philadelphia, Pa.
Dr. Arch. B. Clapp.....Muscatine, Iowa
31. "Remarks on Chronic Otorrhea."
By Dr. J. A. FerreeColumbus, Ohio
Discussion by Dr. F. B. Macmullen.....Detroit, Mich.
Dr. J. F. BooneChicago, Ill.
32. "Additional Cases of Neurolabyrinthitis of Drug Origin."
By Dr. Wm. G. Shemeley, Jr.Philadelphia, Pa.
Discussion by Dr. Alva SowersChicago, Ill.
Dr. J. J. McDermott.....St. Joseph, Mich.
33. "Chronic Otitis Media Treated by Autogenous Vaccine."
By Dr. John J. SmithSan Francisco, Calif.
Discussion by Dr. Ella G. HuntCincinnati, Ohio
Dr. John C. SmithJackson, Mich.
34. "Repairing Perforations of the Membrani Tympani with Collodion."
By Dr. Francis B. KelloggLos Angeles, Calif.
Discussion by Dr. Richard Street.....Chicago, Ill.
Dr. H. F. Weaver.....Philadelphia, Pa.
35. "Unusual Case of Mastoiditis."
By Dr. Grant S. PeckDenver, Colo.
Discussion by Dr. C. D. ArndtMt. Vernon, Ohio
Dr. F. J. CadySaginaw, Mich.

EDITORIAL

Wednesday, June 21st, 1922

SEVENTH SESSION—2 P. M., GOLF CLUB

O., O. & L. GOLF TOURNAMENT

Prize.—President's Cup

Thursday, June 22nd, 1922

EIGHTH SESSION—9 A. M., HOTEL DRAKE

CO-OPERATIVE PAPERS

- "Disturbances of the Upper Respiratory Tract With Associated Eye and Ear Complications."
36. "Histology and Bacteriology of the Tonsils and Adenoids."
By Dr. J. V. F. ClayPhiladelphia, Pa.
37. "Function and Description of Tonsils and Adenoids."
By Dr. G. J. PalenPhiladelphia, Pa.
38. "Tonsils and Peritonsillar Conditions."
By Dr. H. A. FosterNew York
39. "Symptomatology, Local, Subjective and Objective."
"By Dr. I. O. DenmanToledo, O.
40. "Catharrhal Diseases of Children."
By Dr. I. O. DenmanToledo, Ohio
41. "Sinus Conditions as Causative Factors."
By Dr. J. I. DowlingAlbany, N. Y.
42. "Inter-relation of Rhinology and Orthodontia."
By Dr. Jas. A. BurrillChicago, Ill.
By Dr. Burton HaseltineChicago, Ill.
43. "Chronic Catarrhal Laryngitis."
By Dr. T. L. ShearerBaltimore, Md.
44. "Atrophic Rhinitis and Pharyngitis."
By Dr. W. H. PhillipsCleveland, Ohio
45. "Eye Complications."
By Dr. Ralph I. LloydBrooklyn, N. Y.
46. "Ear Complications."
By Dr. H. P. BellowsBoston, Mass.

Thursday, June 22nd, 1922

NINTH SESSION—1:30 P. M., HOTEL DRAKE

JOINT MEETING A. I. H. and O., O. & L. SOCIETIES

ENDOCRINOLOGY

Modern Discoveries and Interpretations

Special joint meeting of the A. I. H. and the O., O. & L. Societies in Clinical Medicine, Surgery, Gynecology, Obstetrics, Ophthalmology, Otology, Laryngology and Anaesthesia. (Note—Recognizing the correlation of Endocrinopathy pertaining to the allied bureaus of these societies, it is, therefore, apropos that this subject be given modern team work consideration and pre-

EDITORIAL

sentation, showing the direct, as well as the associated factors in these different departments of medicine.)

47. "Clinical Medical Considerations."
By Dr. Augustus Korndoerfer, Jr. Philadelphia, Pa.
 48. "Surgical and Gynecological Deliberations."
By Dr. Hugh Beebe Ann Arbor, Mich.
 49. "Obstetrical Observations."
By Dr. Leon Loizeaux New York
 50. "The Ophthalmologist and the Internist."
By Dr. Burton Hazeltine Chicago, Ill.
 51. "General Discussion."
Opened by Dr. Alonzo Waterman Chicago, Ill.
Followed by Dr. Claude A. Burrett Columbus, Ohio
Dr. Gilbert Fitzpatrick Chicago, Ill.
Dr. G. J. Palen Philadelphia, Pa.
-

NOTICE

To every member who plays golf: Be sure and bring your clubs along for the tournament Wednesday afternoon. Also bring properly qualified handicap card from your own club, so that the proper handicaps can be made, giving each player an equal show.

First Prize—Net (handicap). Score 18 holes. Medal Play, 50 points.

Second Prize—Four short holes. Gross Score, 20 points.

Third Prize—Four long holes. Gross Score, 20 points.

Fourth of Booby Prize—Net (handicap), 18 holes, Medal Play, 10 points.

EDITORIAL

ABSTRACTS OF PAPERS TO BE PRESENTED AT THE O., O. & L. MEETING IN CHICAGO

REPORT OF A CASE OF BRAIN ABSCESS

W. J. BLACKBURN, M.D.,

Dayton, Ohio.

This case was one following an old case of Chronic Suppurative Otitis Media of twenty years' standing.

It is given to emphasize the so-called "running ear" in the earlier stages, and to again call to our mind that the patient with a chronic suppurative ear is in constant danger of complications which may have a fatal termination.

A mastoid operation was first performed, which gave relief for several days. Later marked symptoms of brain abscess developed and the patient was operated upon for this condition. The case was further complicated by an abscess of the right lung. Recovery from all symptoms was the ultimate result, and the patient is now in good health and has a normal mentality.

"THROAT AND EAR SYMPTOMS IN RHEUMATIC CASES"

DOUGLAS MACFARLAN, M.D.,

Philadelphia, Pa.

"Manifestation of rheumatic diathesis in the ear and in the throat are rare, yet the conditions seen as such are consistently repeated. The complications in the ear are: neuralgia about ear, itching of the canal, eczemas and urticaria, gouty deposits in and about the cartilagenous concha and canal, alteration of cerumen, tinnitus, chronic ill-defined obstructive deafness, and acute serous (exudative) catarrh.

"In the throat one condition is typical, a 'lateral' pharyngitis,

that is, a pharyngitis of the lateral walls of the naso pharynx. Discharge is seldom seen, but pain is a constant symptom, and is evident in greater severity than the appearances can explain."

"ADDITIONAL CASES OF NEUROLABYRINTHITIS"

WILLIAM G. SHEMELEY, JR., M.D.,

Philadelphia, Pa.

"No skill, beyond that possessed by all physicians, is necessary to diagnose neuritis of the eighth nerve.

"The general profession and laity should be educated to the point that the initial symptom of Neurolabyrinthitis shall be as easily recognized as are the symptoms of appendicitis.

"Three cases will be cited in detail. Two have as causative factors, quinine; one was caused by methylsalicylate, that was dropped into the canal of the ear."

"A STUDY OF VACCINE AND SERUM THERAPY, AND ITS RELATION TO OTO LARYNGOLOGY"

G. B. RICE, M.D.,

Boston, Mass.

"The exact meaning of the two terms. The early experiments of Metchnikoff, Ehrlich and others. Indifference of the medical profession twenty years ago. Conclusions of the early pathologists in methods of producing immunity. Active and passive immunity—how defined. Theories of how immunity is produced. Varieties of microorganisms found in the respiratory tract. How many infective processes are brought about in the respiratory tract. Value of vaccines and serums in the treatment of certain diseases. How a commercial vaccine should be selected. Methods of taking culture. The use of autogenous vaccines. Reactions. Size and frequency of the dose governed by reaction. The need of taking great care in making subcutaneous and intravenous injections. The use of vaccines in the immunization of patients against acute inflammatory conditions of the upper air tract. An illustrative case. Discussion of the relation of the action of serums and vaccines to homœopathy."

EDITORIAL

"SOMETHING ABOUT CATARACTS"

C. GURNEE FELLOWS, F.A.C.S.

Chicago, Ill.

"The inadvisability of operating cataract in one eye, when the other eye is still useful.

"This is particularly true of aged people, who may never grow blind in the sound eye; not so true of middle-aged individuals with premature cataracts, who have longer years ahead of them and who must have useful sight in order to earn their living.

"Citation of cases, illustrating both conditions."

"A SIMPLE METHOD OF TYING LIGATURES IN THE THROAT AND MOUTH"

A. R. GRANT, M.D.,

Utica, N. Y.

"Sutures and Ligatures: for hemostasis after tonsillectomy: the vertical mattress suture and the Eastman continued knotted tension suture in cleft palate operations: technique in suturing with smallest eye needles and finest silk: dermal sutures."

"TUMORS OF THE CONJUNCTIVA"

ALVA SOWERS, M.D.,

"The paper entitled, 'Tumors of the Conjunctiva,' will deal with histologic diagnosis of various tumors of the conjunctiva, special attention being paid to the histology of the dermoid, with report of a case."

"HETEROPHORIA"

EDWIN S. MUNSON, M.D.,

New York

"A study of 300 cases tested to try and determine the relation between the amount of trouble present in the far and near test. The

statistics gathered also show other interesting points, as the most prevalent form of muscular fault and whether orthophoria, when registered on the test instrument, is normal, especially at the near point."

"UNUSUAL AND SOMETIMES OVERLOOKED CAUSES
FOR REFRACTIVE ANOMALIES"

JAMES A. CAMPBELL, M.D., F.A.C.S.,

St. Louis, Mo.

"There are certain definite and well-understood conditions associated with the refraction of the eye that scarcely need mention or discussion. We recognize and provide for the variable and changeable eye, caused by spasm of the accommodation simulating myopia, and even segmental spasm, which gives an astigmatic picture. We also appreciate and provide for manifest and latent hyperopia. We have seen a hyperopic eye gradually change to a myopic eye, when the lens begins to show the first signs of incipient cataract, by virtue of the infiltration and swelling of the lens itself, thereby increasing its refractive strength."

"SYNERGISM OR CO-OPERATIVE ACTION OF THE
EXTRA OCULAR MUSCLES, AS SHOWN BY
THE OPHTHALMOTROPE"

GEORGE A. SUFFA, M.D.,

Boston, Mass.

"This article, as indicated by the title, is the continuation of a paper read before this body at Asbury Park, June, 1920. Its purpose is to ascertain if there is a law governing ocular movements. The investigation is under two headings; first, a comparative study during rotations of the combined change in the length of the active and passive muscles; second, the change in the combined length of the contact arcs. Measurements in the tables¹ record this data horizontally and vertically at 10, 20 and 30 degrees of version in both the active and passive muscles."

EDITORIAL

"A FEW REMINDERS OF VALUE IN OPHTHALMIC PRACTICE"

GEORGE A. SHEPPARD, M.D.,

New York, N. Y.

"Most of us who have been in practice for many years, find that the pressure of our refractive and surgical work has forced us to limit our study of homœopathic therapeutics. In order to fortify myself against this insidious tendency and possibly stimulate others to do the same, I am going to record some remedies which have proven of great clinical value to me. Of course, there is nothing new in the symptomatology presented, nor will it obviate the need of more thorough study of *Materia Medica*."

"A CASE OF GLAUCOMA"

LEROY THOMPSON, M.D.,

Chicago, Ill.

"The patient, a woman, 42 years of age, with a history indicating glaucoma symptoms had a cycloplegic instilled for refraction in 1919. This was followed immediately by a severe attack of glaucoma in both eyes—at which time vision decreased to ability to count fingers only.

"Has been under continuous treatment since that time and left eye was removed following iridotaxis operation ten months ago.

"I hope to have this patient present at the meeting as there are many interesting angles to it which will be of interest to every ophthalmologist."

"NEGLECTED EYE CONDITIONS"

HENRY L. GOWENS, JR., M.D.,

Philadelphia, Pa.

"The writer has cited a few cases to show what gross neglect is found in some eye conditions.

"The cause of some of these conditions he attributes to the

EDITORIAL

layman, to the general practitioner, to the eye surgeon and to the lack of dissemination of general knowledge as to the sequelae.

"While the writer is mindful of constant effort in this line of thought yet the ever increasing presence of the same conditions prompts him to ask if anything can be done to further reduce the number of these cases."

"TREATMENT OF NON-MALIGNANT AND MALIGNANT GROWTHS OF THE NOSE AND THROAT"

C. E. TEETS, M.D.,

New York, N. Y.

"The treatment which has been successful in some varieties of neoplastic disease consists of surgery followed by applications of pure chromic acid fused upon a probe. Most of the growth is surgically removed leaving a layer of diseased tissue to be destroyed by the chromic acid.

"This method of treatment with slight changes in the technique has been followed for twenty-eight years. A select number of cases will be reported including the two cases of sarcoma reported at the twenty-third annual meeting of the Society, which are enjoying the best of health and no recurrence."

PATCHING THE MEMBRANI TYMPANI WITH COLLODION

FRANCIS B. KELLOGG, M.D.

THIS is not a "paper." It is a suggestion backed by a very limited experience, and submitted for further careful trial, if deemed of sufficient value. We all meet cases of spontaneous perforation followed by a permanent one of greater or less impairment of hearing. A case of this kind came under my care a few months ago. After the subsidence of the original otitis there remained a perforation the size of a small pin head. The idea occurred to me to try to patch this by means of collodion. It seemed possible by this device to improve the hearing and at

EDITORIAL

the same time close an avenue of possible reinfection. A probe was dipped in collodion and quickly applied to the drum membrane just above the perforation, so that the collodion would drip downward over the same. After several excursions the perforation was covered, and there was an immediate improvement in the hearing for the watch from three to six feet.

The subsequent course, however, showed that this method was to be avoided. The improvement in the hearing continued for several weeks when it suddenly lapsed. Examination showed that the collodion had become separated from the drum head, and upon removal, which was accomplished with considerable difficulty and some pain, presented a solid mass as hard as glass, the size of a small pea.

Apparently this had developed by the deposit and dehydrating of mucus upon the collodion. Certainly the amount of collodion used could not account for such a body, although this is to be said as a further objection to this method of application: It is inexact, and there is danger of using more than one realizes.

My present method, which so far, has worked well, is to form a disk of cotton about 3 m.m. in diameter, dip this in collodion and apply it to the perforation. I have a case at the present wearing one such disk in each ear. The hearing for the watch was immediately increased from 18 inches to $2\frac{1}{2}$ feet in the right ear, and from 10 inches to $2\frac{1}{2}$ feet in the left ear after application of the patch.

One week later the hearing had increased to four feet in the right ear and five feet in the left, with practically no disturbance from the patches.

STRABISMUS: ITS ETIOLOGY AND TREATMENT

W. E. BOYNTON, M.D.,

Chicago, Ill.

(a) The diversity of etiology produces a corresponding diversity of pathology and demands the individualization of each case.

(b) The two more prominent etiological factors—error of

EDITORIAL

refraction and muscle imbalance—admit of easy determination and accurate measurement and demand and indicate the individual treatment required.

(c) The other etiological factors are indefinite under our present diagnostic measures.

(d) In all cases with ametropia the effect of glasses fitted under cycloplegia should be definitely determined before any operative measure is attempted.

(e) Squints, which persist under cycloplegia, and those which have existed beyond childhood almost invariably show muscular imbalance and demand operation treatment.

(f) The findings of Stevens Tropometer definitely establish the existence of muscular imbalance, indicate specifically the muscle or muscles affected, accurately characterize and measure the defect, and afford exact knowledge as to the nature and extent of operation measures required.

(g) Tucking is preferable to advancement in all cases except where the insertion is obviously and seriously at fault.

(h) In all cases where a recession is necessary complete section of the tendon with bilateral anchorage to the attachment stump is preferable to notching the tendon or severing its attachment to the globe.

COMMUNICATION FROM THE PRESIDENT OF THE O., O. & L. SOCIETY

One of the prominent commentators of the World's War work states that we had to teach four million men to walk. If you have ever watched the "hay foot, straw foot" squad of rookies drill you will quickly realize that it means co-operation of highly skilled leaders to place these men upon a practical working basis.

Our patient who goes in for opera devotes years to the study of that supposedly simple thing—breathing. His individual co-operation in securing the services of well-known artists is soon proven by his success.

Yet, when it comes to the subject of Medical Investment, which is no less comprehensive, a great number of our special men invest "sight unseen," too often entrusting his successful O., O. & L. pilgrimages to some ephemeral enterprise recommended by the

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first clever salesman that comes along. "Getting the most for our money" as an investor, you must exemplify the exact policy of those organizations whose annual net gains represent your quarterly or semi-annual dividends.

Accordingly, the amount of co-operative attendance, participation and enthusiasm you invest in these scientific conventions, your "Medical Investment" will net you.

The O., O. & L. Journal and the Chicago members have well advertised and prepared for this meeting. We are to have a real treat and are anxious that every member make an effort to attend. For details see program.

J. R. McCLEARY, M.D.

COMMUNICATION FROM THE SECRETARY OF THE O., O. & L. SOCIETY

The fundamental characteristics of the presence of life is growth. This is one of the axioms of nature.

It is equally true that the greatest evidence of life in an organization is growth. Most of you know that ever since I have been secretary I have been stressing the importance of new members. We must have a large organization, not merely of members, but of good live active members.

One of the greatest aids to the growth of our Society is our Journal. The continuance of our Journal, however, demands a large subscription list and a large membership.

We need to be careful that only properly qualified men are elected to our Society, but our aim should be to have every qualified homœopathic specialist a member of the O., O. & L. organization.

Some few months ago I announced a new Honor Roll. On this Honor Roll we are placing the names of those men who have secured one new applicant. I am assuming that the man who signed the application first and whose name is on the upper line is the man to be credited for the new member. I am now printing the first list of the Honor Roll. Your name ought to be there.

Next month we expect to print a new Honor Roll. If you

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didn't get on this month's list let us hope your name will be found in next month's edition.

HONOR ROLL

DR. BURTON HASELTINE
DR. J. A. W. HETRICK
DR. NEIL BENTLEY
DR. DEAN MYERS
DR. GEORGE W. MACKENZIE
DR. E. S. HALLINGER
DR. A. M. MALDEIS
DR. S. J. CATTLEY
DR. H. R. WYNN
DR. JOSEPH CLAY
DR. THEO. E. MILLER

NEIL BENTLEY, *Secretary.*

JOINT COMMUNICATION FROM THE PRESIDENT AND SECRETARY OF THE O., O. & L. SOCIETY

*To the Members of the American Institute of Homœopathy and the
Ophthalmological, Otological and Laryngological Society:*

The enthusiasm shown by President Roy Upham in the joint meeting project of the A. I. H. and O., O. & L. Society, June 22, 1922, readily expresses the ideas of our live wire men in featuring a special subject that will not only be educational from a scientific standpoint, but quite apropos of medical thought today.

Co-operation is the "watch-your-step" slogan of all who appreciate the great importance in medicine "to be just right, as well as right just."

Endocrinology has been accepted as the subject of this joint session. It is most fitting and one that participates as an interesting factor in every specialty or department in the practice of medicine.

The success of a medical convention is in the ability to create ways and means in exchange of knowledge, experience and laboratory science.

The Internist, Surgeon, Gynecologist, Obstetrician, Ophthal-

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mologist, Otologist, Laryngologist and Anaesthetist will present this subject from different angles so that we all can be given enlightenment.

The joint efforts and best thought of the A. I. H. and the O., O. & L. Society are united to make this session of the Convention a classic. No one can afford to miss it. We expect to meet *you* there.

Fraternally yours,

J. R. McCLEARY, *President*,
Cincinnati.

NEIL BENTLEY, *Secretary*,
Detroit.

ETIOLOGY OF HAY FEVER IN ARIZONA AND THE SOUTHWEST.
—Samuel H. Watson, M.D., and Charles S. Kibler, M.D., *Journal of A. M. A.*, Vol. 78, No. 10. Through the co-operation of Prof. J. J. Thomber, of the Botanical Department of the University of Arizona, Doctors Watson and Kibler conclude that hay fever is caused by the pollen from those plants that are wind pollinated and not from those that are insect pollinated.

Whenever a patient proves sensitive to the pollen or pollens of insect pollinated plants (roses, daisies, dandelions, sunflowers, goldenrod, etc.), one should not conclude that these are the cause of the hay fever in that patient, until skin tests have been made, using the pollens from the various wind pollinated plants, known to be pollinated in the vicinity at the time.

It is useless to attempt to either desensitize or treat the patient with pollen extract, unless the identical pollen or pollens producing the condition are recognized and employed.

That trees are of minor importance in the production of hay fever is probably true; however, when they are the causative factor the most important are the cottonwood and the ash. W. G. S., Jr.

THE EYE, EAR, NOSE AND THROAT SYMPTOMS OF EPIDEMIC ENCEPHALITIS*

GEORGE W. MACKENZIE, M.D.

IT is because of the prevalence of symptoms referable to the eye, ear, nose and throat that epidemic encephalitis becomes a disease of importance to the ophthalmologist and otolaryngologist. It is to these specialists that the neurologist must depend mostly for aid in questions of differential diagnosis. In no case reported thus far have symptoms referable to one or another of these organs been missing. Furthermore the presence of such symptoms calls for an examination of these organs by the specialist who understands them best. For instance, in a given case not yet diagnosed, the patient complains of amblyopia as one of the symptoms of his present illness. Since amblyopia may be due to more than one physical change referable to the eye or its sensory or motor pathways it becomes a problem for the ophthalmologist to solve. The writer has just such a case in mind. The case had been seen by several physicians and there was a difference of opinion as to the exact eye findings. All were agreed as to the existence of pronounced impairment of vision. The patient was not malingering in spite of the fact that there was some temptation to do so, on account of a suit for damages that was impending.

The several doctors who examined this case were experts and were aware of the possibility of being called into court to testify as such. The opinion of the first expert was that the amblyopia was due to a degeneration of the optic nerve caused by the inhalation of wood alcohol. His report of the ophthalmoscopic findings was largely negative, somewhat ambiguous and in some respects contradictory. The strongest point he made in behalf of his diagnosis was contraction of the fields of vision; however, he denied the existence of a central scotoma. Concerning the fields of vision he was wrong, for the patient had normal visual fields, as was proved later when more careful technique was used in plotting them.

The second expert called attention to a paresis of the external rectus muscle of the left eye and dilatation of the pupils of both eyes, but he made no reference to a coincident weakness of the accommodation that was very pronounced. He felt that the optic disc of each eye presented a normal appearance, but stressed a find-

*To be read at the Annual Meeting of The O., O. & L. Society, Chicago, Ill., June, 1922.

EYE, EAR, NOSE & THROAT SYMPTOMS OF EPIDEMIC ENCEPHALITIS

ing not mentioned by the previous examiner, namely, a "peculiar mottled appearance of the macular region." He neglected, however, to mention the color of the mottling spots or tell whether they were due to a degeneration or inflammation, or whether they were due to changes in the retina, choroid or both tunics. This lack of definiteness was due, no doubt, to an uncertainty in his own mind. His report did not indicate an exhaustive examination. His opinion, as to the diagnosis, was less certain than the first expert, excepting that he believed the eye condition was not due to wood alcohol poisoning.

The third expert was a neurologist who made a diagnosis which happened to be correct. The report of his findings, however, was more or less slipshod; for instance, his description of the ophthalmoscopic findings was inaccurate. They not only did not support his diagnosis, but could have answered for any one of many other conditions. He mentioned in his report that the patient had nystagmus, but did not indicate its type (rhythmic or undulatory), the plane of the movements (horizontal, rotary, over-head), or the direction (to the right or left, up or down). He also claimed that the patient had impairment of hearing, but presented no findings to indicate how much it was impaired or whether the impairment was due to a lesion in the middle ear, internal ear or the nerve. The eye, ear, nose and throat specialist could hardly be guilty of such crass methods of studying a case as indicated by his findings.

All three examiners were honest in their opinions. Their opinions, however, as expressed in the reports, are worth little or nothing, because of lack of detail and directions.

A symptom of importance to the patient was his relative amblyopia which manifested itself with the onset of other symptoms of his acute ailment. The attention of all three examiners was riveted on the perceiving apparatus of the eye, retina in one instance, intraocular portion of the optic nerve in another, and the retrobulbar portion of the optic nerve in the third instance.

The cause of the patient's poor vision would have been readily revealed to anyone willing to take the time to examine the case thoroughly.

From the history of the case as presented by the patient, the vision was good prior to his present sickness, but very poor since. According to the test card his vision was O. D. 20/70; O. S. 20/100.

Refraction of the eyes revealed an error calling for the following correction: Right eye $+ 3.25$ D sphere = with $+ 1.50$ D cylinder, axis 90 degrees, which brought the vision up to 20/20. Refraction of the left eye revealed an error calling for the following correction: $+ 3.75$ D sphere = with $+ 1.50$ D cylinder axis 90 degrees, which brought the vision up to 20/20 scant. This patient had never worn glasses before his present illness and at the age of twenty years was able to strain his accommodation sufficiently to permit him to see well enough to follow his occupation—that of painting. When he was stricken with a disease that caused paresis of his accommodation, he was no longer able to overcome his refraction error. His acuity of vision suffered in much the same manner as happens in a case of compound hyperopic astigmatism when a mydriatic is put into the eye. A further evidence of the paresis of accommodation was to be noted by the fact that with the full correction before his eyes for distance, he was not able to read .33M type at one-third meter distance without an additional $+ 3.00$ D sphere before each eye.

It is not necessary to enlarge on the methods used in the examinations. Briefly, these errors were found and corrected with the perfect results recorded above; proving conclusively that this patient's poor vision was not due to any pathologic changes in his perceptive apparatus or the centripetal pathways, but to an involvement of the muscular mechanism. A closer study of the case from many angles revealed the site of the lesion to be in the third nucleus. If it had been a third nerve lesion, all of the muscles supplied by the nerve would have been more or less involved and to about the same degree; whereas, in this case only some of the muscles were involved—those supplying the intrinsic eye muscles, ciliary and sphincter pupillae together with the adductors, but only during attempts at convergence. The synergistic action of the adductors, when the patient looks to either side, showed no evidence of involvement from which we may conclude that Monakow's center and the motor pathway corticalwards of this center and the cortical center itself escaped. In short, there was present in this case a disease located in the oculomotor nucleus; while the infranuclear and supranuclear fibers remained intact. The sixth nerve nucleus was also slightly involved.

The pallor of the optic papillae noted by two observers, was

due to a large shallow, temporally placed physiologic cup in a slanting nerve which answers to the description of Elsching's type three. The apparent pallor was not due to a pathologic condition of the nerve. If it had been due to an atrophic or degenerative process of any kind, there would have been some evidence of central scotoma relative or absolute, which was not detectable after three careful tests made with Lloyd's binocular campimeter. Dr. Dean W. Myers, a keen observer, failed likewise to detect any evidence of impaired vision about the central area.

The mottled appearance about the macula, noted by at least two observers, were silvery high-lights occasionally seen reflected from the retina in cases of pronounced hyperopia, especially when using an electric ophthalmoscope. They moved about with every tilt of the ophthalmoscopic mirror and did not remain fixed as occurs in cases of bona fide lesions of the retina.

The poor vision was, in this case, due to faulty working of the oculomotor apparatus with coincidental high error of refraction and not to any fault of the sensory apparatus, or its pathway.

One observer reported a contraction of the visual field for each eye. The correction of the patient's error of refraction for thirteen inches distance revealed normal fields of vision.

Since wood alcohol selects the sensory cranial nerves in preference to the motor nerves, the theory of wood alcohol poisoning, so far as the eye findings are concerned, falls to the ground. We must look for a diagnosis, therefore, among those disease conditions which manifest a selective affinity for the nuclei of the motor nerves, among which are several, which the writer will not take the time to consider now for fear of going too far beyond the limits of his present purpose.

In order to better understand the clinical diagnosis of any ailment and its differential diagnosis from other diseases which may simulate it more or less, it is well to have as full a knowledge of the pathology as possible. The time limited will not permit the writer to give this phase the attention that it deserves. For this reason he wishes to refer those who are interested, to a paper on the "Pathology of Lethargic Encephalitis," by Calhoun, in the *Archives of Neurology and Psychiatry*, January, 1920.

Briefly, lethargic encephalitis produces only mild changes in the brain, limited mostly to perivascular lymphocytic infiltration in

any part of the brain, but particularly of the areas in close proximity to the ventricles. Thus we find round cell infiltration of the basal ganglia and medulla occasionally with petechial-like hemorrhages. Pus cells are conspicuously absent. A section of the infiltrated areas resembles closely the picture of acute cerebral syphilis.

In its clinical picture, too, lethargic encephalitis resembles syphilis. Besides, both diseases are protean in character, associated with very slight fever and are prone to relapse. There is a point of differentiation worth mentioning and that is, in syphilis the second and eighth nerves are frequently involved, whereas in lethargic encephalitis they generally escape. So far as the pathology, the course, the bacteriologic and spinal fluid findings are concerned, there are three diseases which resemble each other, more or less; they are: syphilis, relapsing fever, and African sleeping sickness. All three present a similarity in their intracranial findings and resemble, too, lethargic encephalitis. All tend to run a protracted course with relapse as does also lethargic encephalitis. All three diseases are due to one or another form of treponema. The specific organism of lethargic encephalitis has not yet been determined, but the writer suspects that it will eventually be found to belong to the family of treponema.

The spinal fluid findings are quite similar in these three conditions and also in lethargic encephalitis. The spinal fluid gives a positive Wassermann reaction in the first three diseases, and is beginning to show positive reactions in lethargic encephalitis. All four diseases respond well to the so-called antiluetic remedies.

The writer has considered these several points more fully in the detailed report of a case of lethargic encephalitis elsewhere. The eye symptoms of epidemic lethargic encephalitis are, paresis of the extra ocular muscles. Complete paralysis is rare, and involvement of all of the muscles supplied by a nerve is exceptional. Ptosis, partial or complete, is common. The ptosis is frequently bilateral since during the active stage of the disease the manifestations tend to be bilateral, as occurs in syphilis during the secondary stage, when the virus is more or less diffused throughout the system. Weakness of adduction without interference with the synergistic movement of the two eyes is frequently found. Paresis of the external rectus of one or both sides is fairly common. Dilatation of the pupils with paresis of accommodation is frequent. Dryness of

the conjunctiva from inactivity of the lacrymal gland may be present oftener than has been recorded. The optic nerve is rarely involved.

The symptoms referable to the ear are, vertigo with rhythmic nystagmus, from involvement of the sensory nuclei. According to all authorities, however, it is rare. These symptoms should not be regarded of particular diagnostic worth. Their presence would point more strongly to syphilis than to encephalitis. Tinnitus with nerve deafness may be regarded in the same light as vertigo and nystagmus.

As to the mouth and throat, we meet with quite a few signs suggestive of encephalitis. We find tremor and weakness of the tongue corresponding to involvement of the twelfth nerve nucleus. We do not find atrophy of the tongue as occurs in the case of true bulbar paralysis. There is weakness of the muscle of mastication from involvement of the nucleus of the motor fifth nerve. We find evidence of involvement of the accessory portion of the eleventh nerve and the motor tenth, in that there is hoarseness, which upon inspection of the larynx is shown to be due to feeble adduction of the vocal cords. We find not only weakness of the adductors of the vocal cords, but also the abductors are weak, but less so than the adductors.

This paper by no means exhausts the subject. The object of the paper is to bring to your attention the importance of having an ophthalmologist and otolaryngologist examine and pass judgment on neurological conditions presenting symptoms referable to the eye, ear, nose and throat. This suggestion is particularly applicable to cases of epidemic encephalitis.

1831 Chestnut Street.

EPIDEMIC (LETHARGIC) ENCEPHALITIS. RECURRENCE OF SYMPTOMS ONE AND ONE-HALF YEARS AFTER APPARENT RECOVERY.—George E. Price, M.D., *Journal A. M. A.*, Vol. 78, No. 10: After mentioning cases reported by Blakesley & Mayer, the writer reports the case of a girl, age 12 years, in whom a recurrence of all symptoms took place one and one-half years from the time of apparent recovery. Attention is directed to the possibility of the case having been one of re-infection. The possibility of relapse in epidemic encephalitis is of interest to life insurance statisticians.

W. G. S., Jr.

ARE WE, AS OCULISTS, DOING ALL WE SHOULD FOR THE GENERAL PUBLIC?*

FRED D. LEWIS, M.D.,

Buffalo, N. Y.

THE subject that I have chosen to present at this meeting is one to which I have given a great deal of thought, and, I hope it may bring out considerable discussion. The answer must be entirely yours. Of all professions, that of the physician stands next to that of the ministry. A doctor that considers the return of his work from a monetary standpoint might better be in some commercial employment, as he is a disgrace to the calling he has chosen. A doctor should, above everything else, consider the good he may do for the public at *large*—and are *we* doing all we might in that direction?

Perhaps it would be the better plan to consider this subject in the way a lawyer would present his case in a court, first by presenting his evidence and then drawing deductions.

There is a story told of a woman who, in conversation with a neighbor, remarked that she did not take the interest in books that her friends did, and finished by saying that the reason was perhaps because she had never learned to read. That story would hardly apply to the public today as it is a generally accepted fact that papers, magazines and movies are the media of education for the majority of the people. Are these media being used, and by whom? The answer is emphatically *yes*, and by those who are looking for their own gain and certainly misleading to the readers. Were it not for the extensive use of the press, proprietary medicines, such as can be bought over the counter of any drug store, and whose claim is the cure of any and all ills, would not have been able to create so many wealthy patent medicine concerns.

I will give a few extracts from some advertisements that apply to our own particular work:

EXHIBIT I.—I find in Harper's Bazar as far back as 1903 in the October issue an advertisement by Oren Oneal, M.D., 52 Dear-

*Read at a meeting of the Buffalo Ophthalmological Club, Buffalo, N. Y., October, 1921.

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born Street, Chicago, headed with a striking picture of what I presume to be the doctor, with the statement, "I have never injured the eye of a patient," and "I give my personal study to every case," and the statement, "I have given sight to the blind," and the claim that with his "dissolvent treatment" he cures cases of cataract, paresis of the optic nerve, hemorrhage of the retina, ulcers, iritis, obstruction of tear duct, even straightening cross eyes by a new and painless method that is always successful.

EXHIBIT II.—Advertisement in the Saturday Evening Post, April 23rd, 1921. Have better light in *your* home, too. You need the clear, pure brilliance of Quick-Lite Lamps in your home. It brings better light to the whole family for every evening task or pleasure.

Its mellow radiance protects the precious vision of your loved ones. You owe it to your children's future to provide them with good light *now*. Guard them against eye strain and serious troubles that follow. Let Quick-Lite keep their young eyes *young*, healthy and strong.

EXHIBIT III.—Advertisement in Saturday Evening Post, April 30th, 1921: Poor eyesight is a handicap to women. It reacts against the effectiveness of an otherwise magnetic personality. Your eyes should be examined regularly by an optical specialist and "Sure-On" should be specified to ensure utmost satisfaction. Sure-On glasses, graceful in design and attractive in appearance, have made good eyesight popular.

EXHIBIT IV.—Sunset Magazine, August, 1920: Bon-Opto sharpens vision. It's a system of treating the eyes at home; is practiced daily by hundreds of thousands of people with great satisfaction. The Bon-Opto system quickly relieves inflammation of the eyes and is a help to better eyesight. Ask your druggist. He knows. He will refund your money without question, if you are dissatisfied. There is no other home eye treatment like Bon-Opto.

EXHIBIT V.—Buffalo Sunday Express, May 15th, 1921: The United States Government Has Officially Recognized the Merits of Optometry. The Modern Drugless System of Examining Eyes. Forty-seven States have legally approved Optometric Methods and have laws governing the practice of Optometry. New York State has legally endorsed Optometry for thirteen years. Optometry is taught in Columbia University, Rochester School of Optometry and

other large institutions of learning. Have your Eyes Examined by an Optometrist. *Buffalo Optometric Club.*

Buffalo Sunday Express, July 24th, 1921: Optometry—the dropless method. The year of 1908 was an important one for the people of the State of New York. In that year Optometry (pronounced Op-tom'-e-try) or drugless sight testing—received legal recognition as a separate profession. Governor Charles E. Hughes recognized the good that Optometry had been doing, and signed the bill giving legal standing to the Optometrist.

Optometric Club of Buffalo.

Buffalo Sunday Express of July 3rd, 1921.

This contained a print in the illustrated pages of Eugene G. Wiseman, Opt. D., and stated that the doctor was to give a series of six articles on the eyes, the first to appear in this issue. This has been done while the Optometric Club has carried on its campaign of advertising. Dr. Wiseman, I am told, is the president of this club.

Examples of this kind might be given at great length, but I will let this do as it is sufficient to explain why this paper was prepared.

EXHIBIT VI.—An example of what the public *should* be taught through the press. Buffalo Sunday Press, May 8th, 1921: A Government Warning. The Bureau of Education, Department of the Interior of the United States Government, has issued the following statement:

Another direction in which the efforts of the school nurse and teacher should be applied is in a warning against the opticians and optometrists who improperly style themselves “doctor,” eyesight specialist, and other similar titles. More often than not these men are without any medical training, who merely hold a State license for optometry. In a large number of cases the parents of children, upon being notified of an ocular defect, and advised to see “the doctor,” have recourse to either the optician or optometrist instead of consulting a duly licensed physician practicing ophthalmology.

Buffalo Optical Co.

EXHIBIT VII.—Buffalo Sunday Express, July 24th, 1921: If your eyes give you distress, there is only one course of action open to you. Ask an oculist (physician eye specialist) to examine them.

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Do not go to an optician for so subtle a trouble. The optician sees only the effect. The oculist knows the cause.

Buffalo Optical Co.

I feel here that I may present a single case from my records that illustrates the importance of correction properly done and its results in comfort to the patient.

CASE G. W.—When at school had frequent attacks of dizziness with nausea. Teacher suggested possible eye trouble, but his mother ridiculed the idea because his sight was good. After leaving school he worked on a farm and still had attacks as before. After saving from his wages he told his mother that as he could now pay for it himself he was going to a nearby town to see an optician. He bought glasses that gave him partial but not complete relief. One of my patients referred him to me four years ago when correction of a small amount of hyperopia with astigmatism gave him complete comfort. His last examination showed also a left hyperphoria of a half degree which was corrected by adding a prism to his glasses.

Such parents as he had *need* instruction. Not only is instruction called for, for the general public, but it is being taken up by some as an *economic* measure in factories. As an example of this at the June meeting of the American Homœopathic Ophthalmological, Otological and Laryngological Society, held in Washington, a paper was presented by Dr. Frank Weiland, of Chicago.

SYNOPSIS.—Dr. Weiland will show the economic loss suffered in the industrial world because of physical defects of employees. He will report upon the work of one large corporation in which this loss has been recognized and in which physical defects are regularly corrected as a business investment. He will describe in detail the work of the Medical Department of Montgomery Ward & Company, which, under his direction, had done more than any other large concern in the world to solve the medico-economical problem. I wish to quote, as the completion of my argument from an article published in the *Saturday Evening Post*, August 28th, 1920:

EYESIGHT AND PRODUCTION.—“Investigations in various parts of the country show a definite relationship between the eyesight of workers and plant or office production. In the factories of one Massachusetts company, output was increased 28 per cent. as a re-

sult of corporation activities, in correcting the faulty eyesight of its employees. This particular concern, like hundreds of other American companies, had been giving close attention to many kinds of betterment work. The various buildings had ideal lighting equipment and splendid ventilation. Rest rooms, work chairs and other modern facilities designed to improve working conditions, had been installed. Still there was an under-production that could not be explained. Later the problem was solved when an eye specialist examined the eyes of the employees and found that 70 per cent. of the workers had optical deficiencies in varying degrees. The increased production mentioned above came as a result of supplying proper glasses to all those having defective vision.

"The campaign for better factory and office lighting has made great advances during recent years. So have many other educational programs intended to improve conditions and increase efficiency. The whole country has been awakened to the dangers arising from infected teeth, and hundreds of individual concerns make careful examinations of the hearts and lungs of prospective employees. But notwithstanding the fact that the chief strain of our modern industrial life falls largely on the eyes of the nation's workers, there has never been any active movement inaugurated to improve health and enlarge production by campaigning to save the eyes. Many companies do employ a physician who is making a general examination of incoming workers, subjecting them to a simple acuity test, which uncovers very few eye defects. In hundreds of lines of work where close application is required, latent optical defects rapidly develop and are entirely overlooked by both workers and management. Eye strain is not a disease, but only a form of physical fatigue; however, it is a human defect that is now doing more to limit individual output throughout the country than many real diseases.

"More than 100,000 people in the United States today are either totally or partially blind, and the sad part is that a large percentage of these cases could have been wholly prevented. The result of one survey indicates that about 55 per cent. of all educated Americans suffer from impaired vision. The nation's economic loss from the curtailed production of its citizens who are partially or wholly blind amounts to millions of dollars. What the loss is from the handicap

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placed on the country's workers by impaired eyesight can only be imagined.

"The primary point of attack in overcoming this serious problem of defective vision is to arrange and adopt preventive measures rather than curative practices. The chief causes of eyestrain are overwork, improper illumination, incorrect methods of using the eyes, and failure to remedy defects in the physiological structure of the eye by the use of proper glasses. Though the greatest advantages in eye preservation will undoubtedly come from the growing realization on the part of employers that a high rate of production and good eyes go hand in hand, it is also possible to improve conditions by educating the rank and file of our citizens to eliminate eye abuses."

The article then goes on at length to explain conditions under which the eyes should be used and the need of proper care, both for the good of the employee and from the economic standpoint for the employer.

This gentleman completes the presentation of my case, the importance of which I hope I have made plain, and also the duty we owe the public. The people at *large* should be taught the importance of proper care of the most important organs they possess—the eyes.

How may this be done? Individually we can do nothing, but can we, have *we* the *right* to go along in our regular work, doing good as it presents itself to us, when, with our knowledge of such facts as are presented in this paper and which are familiar to all of us, we do nothing for their better understanding by the public at large?

Are we satisfied that the instruction of the public as to the care of their eyes should be given to them by lamp manufacturers, patent medicine concerns, opticians, optometrists, etc.? In other words, are we doing our full duty? Collectively, we can do much, I believe, to better conditions. The question still is *How?*

ANSWER.—Consult one who specializes in that work. So here we have the solution of our question. Consult one who makes his special line of work the instruction of the public, or, in other words, a press agent.

I would rather incline to leave the methods of such instruction to one who is familiar with such work after presenting the facts of the case and its necessity to him. He might prepare, or have pre-

pared for him articles for publication from time to time in the daily press and popular magazines. Films might be made to show in the moving picture houses, pamphlets might be sent to all employers of help showing the economic advantages to them and increased profits to be made in having their employees' eyes properly examined at stated intervals.

Material for such a campaign might be obtained from the National Committee for the Prevention of Blindness, Inc., 130 East Twenty-second Street, New York, of which my brother, Dr. F. Park Lewis, is first vice-president.

Articles of general interest might be prepared, if asked for, by any of the lecturers on ophthalmology at the various colleges throughout the country. Such articles, I am sure, would be welcomed by national magazines, and probably paid for.

Such an article was prepared, and submitted in competition, and accepted by the Cosmopolitan Magazine, and was given first prize, by Dr. H. O. Reik, Instructor in Ophthalmology, Johns Hopkins University, Baltimore, and published in the September issue of that magazine in 1900. The title was "The Human Eye and How to Care for It."

Other methods of attack on this, which I feel I may call a public menace, readily suggest themselves. These answers to the question of How, however, suggest another question; that of finance, for all this will call for money. Should the members of this club consider the campaign herein suggested, and I believe such an initiative on our part would give us a country-wide reputation for a live and up-to-date body of men, I would propose that an assessment should be made on the members to cover the expense. Perhaps such assessment might be as high as a hundred dollars each. Such amount, however, would have to be determined by an estimate of the cost by the agent we would employ to manage it. I would be strongly opposed to financing it by voluntary contribution of the members, as the whole matter is of such grave importance that each should do an equal part. Whatever the amount, however, that might be called for, I feel sure as an investment it would come back to us many fold.

But—are we doing our full duty to the public, unless *we* institute such a campaign for public education and good?

188 Franklin Street.

PROPER USE OF SPECIAL EXAMINATIONS

RALPH I. LLOYD, M.D.,

Surgeon, New York Ophthalmic Hospital.

THE first duty of a physician is to study his case in order to obtain the information to make a diagnosis, a prognosis and a plan for the care of the case. It is not possible to do one of the three alone, nor wise to try.

As a general proposition, the diagnosis should be made from *positive evidence* and not from negative evidence. Diagnosis by exclusion is an uncertain procedure because we are unable to positively say that the group of diseases which we mentally form to include all the possible ailments which might be the one affecting the patient, includes every malady it should embrace.

No matter how wide the experience of a medical man, he could not possibly have seen all the unusual diseases in every peculiar form. We are prone, therefore, to forget that there is an unincorporated element which is never considered, when we are endeavoring to diagnose by exclusion.

Darwin says that the first great mistake of his scientific career was made when he accepted negative testimony, and the results of this error were so unpleasant to the great man that he resolved never again to base conclusions except upon positive evidence.

He had decided, after much study that a certain animal could not belong to a certain group because no authority had even shown the remains of one or two other animals necessary to connect the animal under discussion with known, but extinct primitive types. After he had published his conclusions with all the ardor of youthful enthusiasm, some one was unkind enough to unearth the fossil remains which as positive evidence settled the question quite contrary to Darwin's opinion. The approach to a diagnosis should be from the positive side and repetition of this suggestion is not out of place. Laboratory findings are of great value when positive, but otherwise mean little. There are few, I think, who value a negative Wassermann very highly. Absence of tubercle bacilli has some weight and so one might go through other laboratory work to em-

phasize the greater importance of positive evidence. Those who specialize in ear work are constantly exposed to the unpleasant effects of a positive opinion based on negative evidence. It is not at all unusual for a consultant in children's diseases to express positive opinion that the temperature present is due to the running ear or ears because he can find no other cause for it.

The process of elimination has been carried out and as he has not been able to find a pneumonia, an endocarditis or other cause; refers the case to the ear man with the mandate that the ear is the cause of the temperature. It is my humble judgment that before we should say that a running ear is the cause of a temperature, we should pin the cause to the ear by some *positive local evidence*. The mere fact that a running ear and a temperature are co-existent, does not render a mastoid operation necessary. It would seem rather certain that after the acute stages of a middle ear infection have passed, temperature is not a prominent symptom. It does sometimes run on in small children, but when the ear is the cause of the temperature, there is something to be found locally to settle the question, if we will search for it.

There has yet to come under my observation a case of brain abscess, sinus thrombosis, meningitis or mastoiditis, without some local evidence, in cases of running ears.

To illustrate the situation more fully, might we consider the case of Mrs. S., who had been sick with a cold. This cold had been apparently much more depressing than any other she had had, and was contracted while caring for her small boy who also had a cold, but recovered promptly. She had more temperature than the average case of the kind and a running ear. The discharge was profuse but without local signs of further significance. The temperature began to run higher and the attending physician began to insist that the ear was needing an operation. The attending aurist held off, but was strongly urged to do something because no other cause could be found. The right eye suddenly became painful, the pupil large and pus in the anterior chamber. This was translated as positive evidence by the physician of septic emboli and the ear was operated by the aurist, and nothing found to account for the panophthalmitis. Later the eye was removed and the temperature gradually declined to normal, and on the twenty-first day or thereabouts the patient began to exfoliate, and the diagnosis of scarlet

fever confirmed by examination of the son, who had been peeling for some days evidently, without attracting attention.

No criticism of the diagnosis made is intended because no one could fathom the case until the positive evidence was forthcoming, but the presence of the *unconsidered factor* in the process of diagnosis by exclusion is plain. The number of cases in which the ear is running and is blamed for a temperature, which turns out later to be due to other causes suggests the advisability of leaving to the ear man the decision concerning the ear rather than follow the present custom of the general consultant or children's specialist making a positive statement based on diagnosis by exclusion.

Parents worried by an obscure illness cannot understand the deadlock between the aurist, who says the ear does not cause the temperature and the other consultant, who says it is due to the ear. It would seem much the better procedure to ask the aurist an *independent* opinion and not tie him up in advance to a diagnosis and a line of treatment. A consultation between the consultants is better than a reference to first one aurist and then another until one is found who will conform to the ideas of the physician who has made a diagnosis by exclusion.

To make plain how impossible it may be for the diagnostician to construct a schema, either mentally or on paper, which would include all of the possibilities of a case; the following case of a patient complaining of a painless lump in the throat without temperature or inconvenience other than slight difficulty in swallowing, will serve.

A woman aged fifty comes to the clinic and a small lump is seen in the middle line posteriorly of the oro-pharynx. The attending physician opened the lump with a guarded bistoury, and the patient expired in a minute or two from haemorrhage. The doctor had diagnosed the lump as a cold abscess. The autopsy showed a dissecting aneurism of the external carotid artery which began about an inch above the bifurcation of the common carotid. It extended down to the bifurcation and there joined the internal carotid artery along which it traveled for a short distance, reaching the lateral wall of the oesophagus. It passed backward toward the median line of the pharynx and perforated the muscular coat about the level of the top of the larynx and became submucous, forming the lump spoken of. No criticism of diagnosis or treatment is in-

tended because this is a type of case beyond the ability of the human mind to diagnose. The result would have been the same in a few days no matter what had been done to avert the inevitable.

Positive evidence could have been elicited by the use of a hypodermic needle, but the *unconsidered element* in making a diagnosis from negative testimony is evident.

It might be suggested that cases mentioned here are unusual cases, and therefore, conclusions based on them are strained. This line of argument would hold if we were discussing the work of the general practitioner; but are consultants called in the easy cases? Do we find the family doctor, children's specialist, general consultant and aurist all interested in the usual case? It is the unusual case which seeks the services of the specialist in all lines of medical work.

It would seem that the following is sample of everyday experience of the aurist during the months of the year when influenzal and infectious ailments of children are common.

A child aged five, has had a cold followed by earache and running from both ears. The temperature has never reached normal and runs as high as 102 degrees, with morning remissions. The family physician has been unable to find a cause after thoroughly and frequently examining the thorax, etc. The family partake of that common belief that all cases of illness are possible of diagnosis immediately, and cure, if they can only find the physician with the brain.

This belief is fostered by the inexperienced physician without realizing it, who fears to lose the case to someone else, and one consultant after another is introduced.

The up-to-date business man of our time, and many persons of foreign extraction, fondly believe that hustle and bustle and "doing something," as they say, is bound to unravel a problem which the family doctor finds is a matter of time and patience. This particular case was rushed to a children's specialist, who examined the child carefully and finally announces in a positive way that the ears are the cause of the temperature, because there is nothing else to cause it. He is taken to an aurist with the positive message and the aurist finds no local signs to indicate that the ear is making trouble. The opposed views of the two specialists are not understood by the father nor by the family doctor, and immediately the process is re-

PROPER USE OF SPECIAL EXAMINATIONS

peated with a different set of consultants and with the same deadlock and same lack of confidence. After a time, the temperature subsides but no concrete cause is ever assigned.

It is not so rare to find in infectious conditions, an irregular temperature, sometimes high; running on to sepsis and even death, without finding the portal of entry.

Scarlet fever in young children sometimes does just this and as running ears are not at all uncommon, the problem we are considering recurs in these cases. The family insists upon a cause for the temperature and the aurist is called and expected to propose something that will cure the case, because of the belief that the ears are the cause of the temperature.

A recent case of this kind was the center of interest of six physicians, three of them aurists. As there was no local evidence of the ears being the source of the septic process, the first two aurists refused to agree with the diagnosis awaiting them upon arrival. The case progressed unfavorably and steadily and finally an aurist was called and he felt the ears might be the cause. It was finally agreed that the mastoids should be rapidly opened, and nothing was found there to account for the condition present. The child went on growing worse and finally died. The point to make in this last case is that in presence of fatal termination and an opinion that the ear might be the cause, an exploratory operation is indicated just as an exploratory operation of the abdomen is indicated under certain circumstances. There is need for better understanding and necessity for a change in the attitude of the children's specialist and the aurist. A diagnosis by exclusion does not warrant a positive opinion, but should lead to a conference and exchange of ideas.

It is wrong for one physician to "pass the buck," as the saying goes, on a proposition concerning which his information is rather informal. Radical measures ought to be based upon positive evidence.

14 Eighth Avenue.

ANGIOMATA TUMOR OF EAR

JAMES A. CAMPBELL, M.D., F.A.C.S.,

St. Louis, Mo.

ALMOST every form of tumor may involve the external ear, but the angiomas are probably the rarest in this location. I have seen three cases, one on the concha, one in the external meatus, and one on the membrane tympani itself.

Angioma tumors of the ear do not differ materially in character from similar growths found elsewhere. They range from small bluish elevation, to tumor the size of a walnut. They may or may not pulsate. They may exist from birth; and they may follow freezing of the auricle. Sometimes they are of very slow growth, and again they may increase rapidly. Generally they are not of serious import, but cases of dangerous hemorrhage have been reported.

My first case was located on the posterior wall of the external meatus, about half way back. It was a soft blood red elevation about the size of a large pea. There was no other trouble with the ear. I applied an electro-cautery point, heated to a dull red. The tumor flattened out and disappeared without hemorrhage.

The second case was a little red tumor on the upper posterior membrane tympani. I touched it with the rounded point of an electrode heated to a dull red, with a similar result.

The third case was a large red soft boggy tumor, the size of a large philbert, springing from the hollow of the concha. The patient was a man about thirty years old. His home surgeon had operated on it by excision. This was followed by a very extensive hemorrhage, which was finally stopped with much difficulty after he had bled for hours. The tumor gradually reformed and after a few months was as large as ever. It was, in a measure, lobulated, looked red and angry.

In this case I used an electric cautery snare heated to a dull red glow. It was slowly tightened, taking plenty of time, until it came off without hemorrhage, with no after trouble. The scab formed, came off in a couple of weeks.

Politzer gives an interesting account of certain cases of angiomatous tumors of the ear where it was necessary to ligate the carotid to stop the hemorrhage. He also relates some fatal cases. He recommends the insertion of silk threads dipped in chloride of iron in the large flat angiomata.

ABSTRACT

OBSERVATIONS ON CLINICAL AND THERAPEUTIC ASPECTS OF CHRONIC INTERNAL HYDROCEPHALUS.—Harry Robert Litchfield, M. D., and Leon H. Dembo, M.D., *Journal A. M. A.*, Vol. 78 No. 10.—As etiological factors are mentioned, acute meningitis or by tumors (Para), as well as ependymal inflammation and obstruction of the veins of Galen by thrombosis or other mechanical causes. In a series of eighteen cases studied as to etiology, fourteen had, as the primary cause of the chronic hydrocephalus, a previous meningitis; in three it was due to a congenital absence of the aqueduct of Sylvius; in one a tumor blocking the iter was the cause. (Blackfan.)

Acquired hydrocephalus of the latent type, when aggravated either spontaneously or as the result of injury, sunstroke, etc., may give rise to serious symptoms as the result of rapid and marked increase of the ventricular exudation.

The following conclusions are offered:

1. Surgical procedures offer the best chances for successful treatment of the obstructive type.
2. The determination of a definite etiologic basis and the employment of all available methods to determine the type of internal hydrocephalus are essential for accuracy in the character of treatment instituted.
3. The hypersecretive and non-absorptive types respond to medical treatment in direct proportion to the character of the underlying etiology and pathology.
4. The role of the endocrines in its clinical and therapeutic relationship to the hypersecretive type, while as yet indefinite, looms forth as a significant factor.

W. G. S., Jr.

A SUGGESTION.—The dentist gives a worth-while idea in his use of appointment cards—many of us would save inconvenience to ourselves and to our patients by following the example. The patient's attention is fixed to the obligation of his returning and the patient will be less lax and indifferent to the attention we believe he needs. We ourselves will not be hurrying through our work to convenience the waiting patient. In short, everyone will be better pleased.

D. M.

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Editorial

ANNOUNCEMENT

During the Editor's absence in Europe this Summer the Journal will be in charge of the Associate Editors, who will give the subscribers the benefit of their best efforts.

Dr. W. G. Shemeley, of Philadelphia, will perform the duties of Chief Editor for the August number and Dr. J. V. F. Clay, for the September number.

G. W. M.

CHICAGO MEETING

THE thirty-fifth annual session of the O., O. & L. Society was one of the most successful in the history of that organization.

The success of the meeting was attained through the co-operation of the Chicago Committee of Arrangements together with the Bureau Chairmen and the Officers of the Society.

The success of these conventions rests entirely upon the amount of interest and enthusiasm each individual member displays, and not upon the officers and committees.

The scientific knowledge and experience offered by the many participants in these meetings certainly furnishes excellent material for keeping our organizations at home, in touch with modern medical progress.

Co-operation and organization is the clock-work of success; it promotes effectiveness of management, insures prompt and satisfactory results in developing each convention, and especially adds that personal equation of being in close contact with each other.

We have had wonderful results this year. With the same

enthusiasm and interest we can increase these dividends from year to year. Let's look forward with greater anticipation to next year's convention.

J. R. McCleary.

FISHER METHOD OF CATARACT EXTRACTION

AT the Wednesday morning session of the O., O. & L. Society, held in Chicago, Dr. William S. Fisher, of Chicago, gave both a graphic and practical demonstration of his method of cataract extraction.

The various steps of the operation were covered in detail by means of illustrated charts. The actual operation was demonstrated on cat's eyes.

Dr. Fisher claims that the results obtained should make the Smith Indian operation the one of choice.

W. G. S., Jr.

DIATHERMIA IN LARYNGEAL TUMORS

DR. NOVAK, of Chicago, gave a very interesting demonstration of the use of diathermia in tumors of the larynx at the Cook County Hospital.

All patients are first subjected to a preliminary tracheotomy. When this wound is healed the application of diathermia to the tumor is begun. In order to secure the largest working field, suspension laryngoscopy is practiced.

General anesthesia is secured by means of chloroform.

W. G. S., Jr.

THE TREATMENT OF LARYNGEAL TUBERCULOSIS*

GEORGE B. RICE, M.D.,

Boston, Mass.

FROM a study of the results obtained by different investigations into the frequency of laryngeal tubercular infection it is probable that this disease occurs as a secondary involvement in about 30 per cent. of the pulmonary cases. Schroetter claims only 6 per cent.; Williams 20 per cent.; Bishop 25 to 30 per cent.; Coakley, 20 per cent.; Mackenzie 33 per cent., and so on—quite a divergence of opinion.

When we consider that the larynx in advanced pulmonary disease is almost constantly bathed in sputum loaded with tubercle bacilli, it is strange that the percentage is not greater, and we, therefore, must believe that a marked natural immunity of these tissues exists.

As a primary disease it is undoubtedly very rare. In a somewhat long and extended experience with this affection the writer has always been able to discover, even in the most incipient forms, an associated pulmonary lesion.

Infection may take place in any stage of pulmonary disease, but there is usually established, first, a lessened local resistance in the larynx, as shown by pallor and perhaps infiltration of the tissues about the posterior commissure or ventricular bands; or a low type of general catarrhal inflammation may exist. These changes are sometimes called pretubercular, as the ideal conditions are then presented for a true tubercular infection.

The early subjective symptoms will depend largely upon the parts of the larynx involved. Hoarseness and desire to clear the throat, a weak, easily fatigued voice, and a dry tickling cough may develop. This would show involvement of the tissues most intimately concerned in voice production. Pain, difficulty in swallowing, a strangling spasmodic cough while eating or drinking, would indicate involvement of the epiglottis, without marked impairment of speech. Either of the two preceding groups of symptoms, associ-

*Read at the annual meeting of the O., O. & L. Society, Washington, D. C., June, 1921.

ated with disturbed digestion, loss of weight and strength, an afternoon temperature and shortness of breath, should arouse suspicion and lead to the most careful examination of the lungs.

CASE I.—In point is as follows: Mrs. B., referred by her singing teacher, consulted the writer for hoarseness, early voice fatigue, shortness of breath and a constant sense of discomfort in the larynx, of nearly a year's duration, although more pronounced during the preceding four weeks. She was attending to her household duties, and trying to keep her position in a church quartet. Examination of the larynx showed general pallor, slight infiltration at the posterior commissure, with a number of white elevations over the anterior border. Examination of the chest disclosed pronounced pathological involvement of the right apex. The patient was soon after admitted to the Massachusetts State Sanatorium at Rutland, and recovered after eight months' treatment.

CASE II.—Also illustrates this condition: Mrs. G. consulted the writer in March, 1908, complaining of hoarseness, slight cough, occasional expectoration of blood-streaked sputum, loss of weight and early fatigue. The symptoms had gradually developed during the past year. The patient was very much distressed and apprehensive, feared she was tubercular, but had been assured she was not. She was having an afternoon temperature of around 100, and respirations of about 26.

An examination of the larynx showed infiltration and redness of the right vocal band. The right lung was markedly involved, in the second stage of advancement. She declined sanatorium treatment but was faithful in carrying out this treatment at home, and came in for local attention as often as the writer thought necessary. Her last visit was in July, 1913, when a little hypertrophied lymphoid tissue was removed from the base of the tongue. The larynx at this time presented a normal appearance, and the lung was practically free from evidence of the disease. A letter received a few months later told of continued good health.

These cases are examples of the class known as pretubercular laryngitis, but an exact line of distinction between a pretubercular larynx and a truly tubercular larynx is, of course, impossible in a large majority of the incipient class of cases. Almost invariably infiltration will be noticed early in the disease, most frequently

TREATMENT OF LARYNGEAL TUBERCULOSIS

at or about the posterior commissure, together with a general catarrhal inflammation.

ANAEMIA.—Authors differ as to the significance of this condition as a local symptom. In the writer's experience anaemia is common. Ulceration is frequently seen in advanced cases, and may occur in any portion of the larynx. Afternoon temperature is frequently, but not invariably, present.

Predisposing causes are many: Unsanitary surroundings and occupations, and confinement indoors; dusty occupations, such as those followed by bakers and stoneworkers. Previous laryngeal disease of such a nature as to decrease the local resistance must also be considered.

All tubercular infections show early infiltration, the extent and degree of this infiltration depending upon the thickness of the mucosa, and the underlying tissues. In the soft parts, such as the aryteno-epiglottic fold and ventricular bands, the infiltration may be considerable. On the other hand, where the submucosa tissues are thin, as over the epiglottis and the inner surface of the arytenoids, the infiltration may be very slight indeed.

The next stage is the tubercle, which is a mass of epithelioid cells interspersed with lymphoid cells, enclosed by fibrillae. In this is giant cell proliferation. The tubercle is gray or white in color and varies in size from a minute point to a nodule as large as a pea. The tubercles are superficial and vary in number. They rapidly undergo caseation and form an ulcer—the next stage. Occasionally the tubercle does not break down, but organizes, becomes fibrous, and gives way to scar tissue. This process may occur spontaneously or as the result of local antiseptic and stimulating treatment. Tubercle bacilli exist in this conglomerate mass, although their presence is often difficult to demonstrate microscopically. Perichondritis is a later manifestation, and occurs most frequently in the epiglottis and arytenoids. A mixed infection usually occurs in the broken down tubercle, and greatly aggravates the condition. Infiltration does not necessarily disappear with the formation of the tubercle, but may increase and become an added danger by mechanical interference with respiration.

It has been asserted by some authorities that an invasion of the larynx by the tubercle bacilli is an indication of further development in the pulmonary lesion, and on the other hand that improvement

in the laryngeal disease is due, in a great measure, to corresponding improvement in the lungs. That this statement is not correct can be demonstrated by cases, for it has been proven over and over again that a good proportion of those patients suffering from laryngeal tuberculosis, if seen early in the disease, can be cured of the local lesion. To repeat a well-known fact, immunity is a varying quantity, always changing for unknown reasons. A patient at one time responds to general and local treatment, and at other times shows no resistance against disease.

The form of treatment must depend largely upon local conditions, and these localized lesions must be treated locally, in conjunction with the other recognized methods mentioned, and which have been so successful in our sanatoria all over the country.

Pottenger claims good results from the injection of Van Ruck's watery extract of tuberculin. He states that the local reaction can be watched, and the dose occasionally graduated. Autogenous vaccines and the auto-filtrate, as recommended by Duncan, of New York, are of value in the mixed infection cases. Cough sedatives in the form of syrups, lozenges and the like should be avoided, except in desperate incurable cases, as they disturb digestion and decrease general resistance.

The correction of nasal, nasopharyngeal and pharyngeal abnormalities is of the utmost importance. If the patient is in fairly good condition minor surgical operations are well borne, and the good results obtained justify these procedures.

In searching for foci of infection the accessory sinuses, the lymphoid ring, and the teeth and gums should not be forgotten. Several authorities state that in more than 50 per cent. of laryngeal tubercular cases the lingual tonsil will be found to be hypertrophied, and, therefore, removal of these lymphoid nodules is desirable.

The local treatment consists of inhalations, sprays, insufflations, medicaments—applied by means of a swab, submucous and intratracheal injections, and steam inhalations (by means of a simple steam atomizer). The tincture of gum benzoin compound is an excellent medicament for use in the steam inhaler for its sedative effect. Spraying the larynx with a warm Dobell's or Crandall's solution should always precede the use of any form of local medication; thus preparing a clean field for further applications.

Insufflations of orthoform or apothesine are often useful in

TREATMENT OF LARYNGEAL TUBERCULOSIS

controlling pain, and can be used before giving nourishment. Iodoform is irritating, disturbs digestion and is, in the writer's experience, valueless. Medicaments usually recommended for swab application are lactic acid, argyrol, silvol, ichthyol, guaiacol and formol. Lactic acid, suggested by Krause in 1885, has been used more extensively perhaps than any other application. This agent in solution of 20 to 25 per cent., stimulates, and superficially cauterizes the tissues. The writer has seen but little benefit from its use, and this medicant is being gradually discarded for other more useful preparations. Argyrol and silvol, two of the silver salts in common use, are of much value in the more acute inflammatory conditions. They can be used in strengths of from 10 to 40 per cent., according to the tolerance of the patient. Ichthyol is helpful in the cases where dryness is a marked feature. It can be used as a spray (10 to 20 grains to the ounce), or by swab application. Guaiacol has not been found useful.

In 1898 the writer's associate at that time—Dr. N. H. Houghton—and the writer began cautious use of formol in the treatment of tubercular cases seen at the Massachusetts Homœopathic Hospital. So far as the writer was aware these were the initial experiments in the search for an antiseptic powerful enough to destroy micro-organisms, to promote improved local circulation, and yet mild enough to be tolerated by the patient. It seems, however, that Lockard made similar experiments a year earlier, and arrived at the same conclusions, namely: that in well-selected cases we have in formol a most potent remedy. It is particularly effective in the sluggish advanced type of laryngeal disease, when ulceration and pallor of the tissues are present. As this agent is very irritating a solution of 1 per cent. should be used until tolerance is established, then a 2, 3 and even 5 per cent. solution can be applied by means of a laryngeal cotton applicator. The larynx should be well illuminated, and the first application should be used with caution, as a laryngeal spasm may ensue. It is always necessary to teach the patient the proper use of an atomizer with a laryngeal tip attached, and also the use of the laryngeal applicator. By securing in this way the patient's help, applications can be carried out regularly. In suitable cases this can be accomplished without great difficulty, if the patient is willing to give full co-operation.

Formol applications can be made daily, or every other day as

indicated. In a limited number of cases the irritation produced by the formol applications persists, and finally a distinct aggravation of all the local symptoms may occur. In such instance a weaker solution should be used at longer intervals. In cases where pain on swallowing is a marked feature intertracheal injections for temporary relief can be made with benefit. Lockard recommends the following to be injected by means of a laryngeal syringe:

Menthol	1 part
Almond Oil	3 parts
Yolk of Egg	25 parts
Orthoform	12 parts
Water to make 100 parts.	

This solution should be warmed, and from one-quarter to one ounce injected at a sitting.

Surgical procedures should be undertaken only by an expert in laryngeal work. These consist of curettment of sluggish ulcers, the removal of fibrous nodules, and the incision of oedematous infiltrations.

For painful dysphagia Dr. Robert McD. Lukens suggests the use of an alcoholic solution for the purpose of blocking the internal branch of the superior laryngeal nerve. His description is as follows: "Thorough aseptic precautions should be taken throughout, as regards the operator's hands, instruments, and the skin of the neck. The instruments and solution required are a Luer's or Record syringe, tinct. of iodine, and the fluid for injection, which is a 65 to 85 per cent. alcohol. The syringe should be used with a one and one-half inch, twenty-four gauge needle with a sharp point." Lukens uses a solution consisting of novocain, 2 grains; chloroform, 10 minims; alcohol, 6 drams; water, 2 drams—essentially a 65 per cent. solution of alcohol.

The patient should either be lying supine with the head, neck and shoulder raised on a pillow and the head turned to one side, or sitting upright in a chair with a comfortable back. He prefers the sitting posture with the head in a natural position and the neck not rigid, which seems to be the most convenient for the patient and the operator alike. The greater cornu of the hyoid bone and the superior cornu of the thyroid cartilage are located with the index finger of the left hand and the loaded syringe in the right hand. The needle is then thrust through the skin about one inch anterior to the

directing finger and a quarter inch above the margin of the thyroid cartilage and pushed backward and inward, the point being raised from time to time to locate its position by the directing finger-tip of the left hand. The patient gives the signal of pain by raising his hand. The nerve has now been touched and a drop or two of the solution is injected and a few seconds are allowed to pass to see if there is cough, due to the fluid entering the lumen of the larynx. If a cough develops, the syringe is withdrawn a little and a few more drops injected. If no cough is present then one-half to one c.c. of the solution is injected, moving the needle about so as to surround the nerve thoroughly. Usually the pain is intensified by the discharge of the fluid into the tissues about the nerve, but passes off in a few seconds.

One or both sides may be injected at one sitting. Lukens has injected both sides eighteen times, using thirty-six injections, and has noticed no untoward effects that could be ascribed to the bilateral injection. One patient complained of a "slight constriction" in the throat, but on the other hand another patient complained of the same thing who had only the left side injected. These were the only two patients who had any untoward effect, and this passed off in a few days, and in none had paralysis or swelling developed. The side to be injected depends upon the site of the greatest pain in swallowing, the site of the lesion and the side on which the nerve is more tender. If the injection of one side does not wholly relieve the pain the other is injected at the same sitting. If the pain is not relieved the nerves are injected at intervals of three to five days.

The following cases further illustrate some of the points made in this paper:

CASE III.—Mrs. F., age 46, referred November 15, 1915, from the Rutland Sanatorium, where she had been for two and one-half years. Three months previously she developed hoarseness and a troublesome cough. There was a history of a right lung infection. Examination of the larynx showed infiltration and fibrous tissue at the posterior commissure, which, on removal, demonstrated giant cells and degenerate changes. The patient was under treatment eight months when the larynx had healed.

CASE IV.—Mrs. W., age 43, referred from the Rutland Sanatorium where she had been for five months. She complained of hoarseness and pain in the larynx. Both lungs were involved and

progressive; infiltration of the posterior portion of the aryteno-epiglottic fold and both ventricular bands, with two ulcerative areas in the former structure, posteriorly. Active formol treatment was begun, with continued improvement of the laryngeal condition but rapid progression of the pulmonary. The patient died a year later without any recurrence of the laryngeal trouble.

CASE V.—Mrs. H., age 37, was also sent from the Rutland State Sanatorium, where she had been for a year. For four months there had been hoarseness, increased cough, afternoon temperature. Both lungs were involved. Examination showed ulceration of the posterior portion of both vocal bands, with some infiltration at the posterior commissure. Because of this condition the patient was discharged from the sanatorium and remained at home, carrying out the hospital treatment faithfully. Internal remedies were given, iodine being the preferred one. Lactic acid and various other local medicaments were tried with negative results. Three months later the use of formol was begun. The patient was taught to make an application daily herself, with almost immediate improvement, which went on to complete recovery. The pulmonary condition also improved. At present, ten years after the treatment, she is in good health, with no tendency toward recurrence of either the pulmonary or laryngeal trouble.

CASE VI.—Miss W., six months at Rutland Sanatorium. Moderate degree of right-sided pulmonary involvement; larynx showed ulceration of the left aryteno-epiglottic fold and the epiglottis, and infiltration of the left ventricular band. The patient was taught to make laryngeal applications of argyrol, alternating with formol. The larynx healed in one year, with recovery from the pulmonary condition also. She has been under observation for twelve years with no sign of recurrence.

CASE VII.—Is given more in detail because of the many interesting features connected with it.

April 24, 1906, Mrs. L. consulted the writer through the courtesy of Dr. H. H. Braley, of Concord, Mass. She complained of cough, hoarseness, loss of weight, afternoon temperature, and pain on swallowing solids. The previous January she had suffered a severe attack of pneumonia, followed by an empyema of the plural cavity, which had been opened and drained, and had finally closed. The hoarseness began soon after this operation. The

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larynx at this examination showed a mass of inflammatory tissue involving almost all of these structures (except the vocal bands) including the epiglottis. Pending further investigation the condition was diagnosed as tubercular, and as the lungs showed advanced involvement she was sent by Dr. Braley to Rutland, where she was under the care of the late Dr. David Butler. Here Mrs. L. remained until June 12th, when she was brought to the Massachusetts Homœopathic Hospital by Dr. Butler, suffering from extreme difficulty in respiration. She was seen by the writer that evening and a tracheotomy was at once performed. The patient was much more emaciated than at the first visit, and was very weak. Unfortunately her pulmonary condition at this time can not be given as Dr. Butler's records have been destroyed.

The patient made an extremely rapid recovery from the operation, leaving the hospital on June 25th, and coming to the office for local treatment. She then returned to Rutland, still wearing the tracheotomy tube, and was not seen again until July 10th, when the larynx was so greatly improved that it was thought safe to remove the tracheotomy tube. July 12th the larynx did not look quite so well; there was more swelling and irritation, but still sufficient breathing space. July 28th the throat was about the same, but the patient thought there was more difficulty in breathing. The glottic space, however, looked sufficiently large.

September 1st the patient was hurried to the hospital and a tracheotomy tube introduced. She again made a rapid recovery, leaving the hospital on the seventh day; returning to her home on the eleventh. October 2nd, the patient came to the office. She had gained three pounds in weight, was coughing less, and the larynx showed marked improvement. As she was now at home regular treatments to the larynx were instituted by the writer, consisting of 20 per cent. argyrol spray, and applications of $\frac{1}{2}$ to 1 per cent. of formaldehyde in water. The patient was taught to make the laryngeal treatment herself, and she carried them out regularly.

October 12, 1906, Mrs. L. had gained another three pounds; the cough was less troublesome, and the larynx looked well. During this time the patient had been receiving general treatment from Dr. Braley. October 22nd the patient was still improving. October 30th several bits of fibrous tissue were removed from the posterior commissure, and the ulcerated areas curetted. She was then sent to

the hospital for the night. On the thirty-first the larynx was swabbed with a 1 per cent. formol solution. She went home that day and was not seen again until November 6th, when there was very marked improvement in the whole laryngeal condition. November 23rd, the larynx looked well, and she was still wearing the tracheotomy tube.

February 11, 1907, more inflammatory tissue was removed from the larynx under cocain. She was again sent to the hospital, returning home next day. February 18th the larynx was found to be very much better. March 15th, this operation was again repeated, and a few days later the tube was removed. She got along now comfortably without the tracheotomy tube, although the voice was only a rough whisper.

April 3rd, there was a little difficulty in breathing but the larynx looked well. The writer did not see Mrs. L. again until June 7, 1907, when she came into the office suffering from an acute laryngitis. During these months her pulmonary condition had improved greatly, her weight was almost normal, and her general health good. June 10th, she came to the office breathing with great difficulty. The writer sent her to the Massachusetts Homœopathic Hospital and the next day the tracheotomy tube was replaced. June 26th, inflammatory tissue was removed from the larynx. July 25th, the tube was removed experimentally, but was replaced on the next day. The writer did not see Mrs. L. again until September 6th. Her general condition was good and the larynx looked better than at any time. On putting her finger over the mouth of the tube an audible speaking voice of fair quality was produced.

November 13th, the tube was replaced by a larger one. November 21st, the larynx was in fine condition but the writer did not think it safe to remove the tube.

January, 1908, there developed an ulceration of the skin about the tracheotomy wound. This area was curetted and cauterized with nitrate of silver. Under Dr. John L. Coffin's direction various ointments were used, and February 5, 1908, Dr. Coffin used the X-ray. This area was now quite large and looked bad. The general condition, however, remained good. The X-ray was used several times, and March 5th, marked improvement was noticed. Under the continued use of this treatment the ulcerated area on July 29th had completely healed. There was recurrence September 8, 1908.

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but it yielded quickly to further X-ray treatments. On November 17th, attempts were made to forcibly dilate the glottic opening with tubes introduced through the tracheotomy wound. These treatments were carried out over a long period with indifferent results, many visits being made between this time and June 8, 1909. On this date an anterior incision was made in the larynx and a dilating tube put in from above. This tube was worn for several days at a time, being replaced with larger ones from time to time, the tracheotomy canula, of course, still being in place. December 11, 1909, a small ulcer on the skin about the tracheotomy wound appeared, and one treatment was given by Dr. J. L. Coffin.

The patient was not seen after this until September 8, 1911. She had been wearing the tracheotomy tube all this time, was in good health, and had married again in the interval—doing her own housework.

The larynx seemed to be in very good condition, the vocal bands quite normal in appearance, and the glottic opening seemed sufficient.

The patient was so comfortable with the tracheotomy tube that she did not wish to have it removed. The writer did not, therefore, see her again until February 16, 1915, when the larynx looked so well that she consented to removal of the tube, which was done on May 9th.

April 20th, the larynx appeared well and she could breathe comfortably. The tracheotomy wound had not closed. The edges were now freshened and stimulated with silver nitrate. May 7th, the wound was still open, and the edges were again freshened and stitched together. This wound healed by first intention and the stitches were removed May 14, 1915. The patient remained in good health, her voice was fairly normal, and there was no inflammation in the larynx. The epiglottis was practically gone, but there was no difficulty in swallowing, nor did foreign matter find its way into the larynx. This shows Nature's provision in endowing the aryteno-epiglottic fold with muscular fibres, the contraction of which closes the glottis on swallowing.

March 10, 1921, the patient came in for a certificate of good health that she might accept a position in the Public Library in her home town. Her voice was perfectly good, her general health good;

an examination of the lungs negative, and secretions from the larynx did not show the presence of tubercle bacilli.

CASE VIII.—Mr. R., age 32, consulted the writer on Jan. 29, 1920. He stated that he had suffered a severe attack of pleurisy a year previously, and following this was considered tubercular and sent to the Rutland State Sanatorium. He was very unhappy there and left by his own desire before he was considered cured. Soon after leaving this institution his cough increased, and he became quite hoarse. He did not improve under general treatment but continued to lose weight and strength, and finally found it difficult to speak above a whisper. When the writer saw him he was greatly depressed mentally; said his case was hopeless, and that he would only take treatment at his home; nothing would induce him to return to the sanatorium. He promised, however, to follow the writer's directions implicitly.

Examination of the lungs showed a second stage advancement in the left apex. The larynx was oedematous; particularly on the left side, the left vocal band was ulcerated, and there was a nodule of considerable size just anterior to the ulcerated area. The tip of the epiglottis also was ulcerated. Examination of the sputum was positive. His afternoon temperature varied from 100 to 102. Sanatorium treatment was at once instituted at his home. The iodid of arsenate was given as a remedy, and the larynx was treated with argyrol and formol. He was taught to make these applications himself, and carried them out faithfully. Improvement began almost at once. In three months his voice returned, his strength had greatly improved, and he was able to return to his occupation as sales manager a part of every day.

At present the patient is in good general health; his voice useful, the t. b. have disappeared from his sputum, and he does not cough. A permanent cure in this case is reasonably certain.

DISCUSSION

ALFRED LEWY, Chicago: Within the recollection of nearly all of us the recognition of a tubercular lesion of the larynx was looked upon as insuring the death of the patient within the next eighteen months. How much this viewpoint may be changed is demonstrated by Dr. Rice's most excellent exposition of the subject, and the results of his unusually skillful treatment.

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My own experience with this affliction does not begin to compare in volume with that of Dr. Rice, but agrees with his in practically all particulars. I have never seen a tubercular lesion of the larynx without a lung lesion also being present, although, as has no doubt happened with many of you, occasionally the laryngeal diagnosis has led to the discovery of the lung lesion. In spite of the successful work done by able laryngologists, as recently as four years ago several of the tuberculosis specialists at Saranac Lake with whom I talked, were depending entirely on rest and general measures for the treatment of laryngeal lesions. I understand that there is now a laryngologist at Saranac. As to local applications, I have seen nothing from lactic acid, but have seen healing from a combination of formalin and iodoglycerin. I usually begin with 2 per cent. formalin and increase as tolerated to about 10 per cent. Acute inflammatory reactions are applicated usually with organic silver solutions.

Several years ago I published the formula of the iodoglycerin formalin in the Journal of this Society. It is as follows:

Resublimed Iodin	grains	5
Potassium Iodid	grains	5
Spirits Vini Rectificati	drams	1
Formalin	Minims	12 to 60
Glycerin to make	ounces	1

The solution can be made approximately by using tincture iodin glycerin and formalin in proper proportion. I presume formalin and formol, used by Dr. Rice, are identical or similar; I have merely added the iodin. The formalin suggestion I obtained from Lockard's book. (This same solution in milder dose I have found useful in chronic suppurative otitis media.) There is one therapeutic procedure not mentioned by Dr. Rice—igni-puncture—which I believe is of value in tubercular infiltrations, and I should like to know if Dr. Rice or any of you have had experience with the electro cautery of ulcerated areas in cases where the formalin treatment has failed. I should also like to hear from any one with experience with helio or radiotherapy, and in cases of perichondritis any successful curative treatment would be welcomed. Of course, perichondritis of the epiglottis can be managed or the epiglottis removed, if necessary.

I have nothing to add to the palliative treatment advised by Dr. Rice, except to call attention to the fact that blocking of the internal branch of the superior laryngeal nerve by alcohol was first practiced by Dr. Rudolph Hoffman, of Vienna, in 1908. Independently of him, but about six months later while working in a clinic in Berlin, I conceived the same idea, and it was tried there. After my return to this country I published two cases in the *Laryngoscope*, 1910, which were the first in this country. Dr. Hoffman met an untimely death by a rioting mob in Vienna after the war, while engaged in aiding another victim of violence. The alcohol injections are not particularly successful in perichondritis, in lesions of the epiglottis, and I am not certain that injections of both sides does not lead in some cases to more rapid disintegration of the tissues, but the relief from pain in ulcerative processes, aside from the above-mentioned, is so gratifying, besides permitting the patient to eat and gain strength, that I believe it ranks as an important advance in therapeutics of this disease. There is a hint I might add to Dr. Rice's description of the technic: a pain shooting up toward the ear is pretty good evidence that the nerve has been reached by the needle, and the injection of fluid should begin there.

WILLIAM H. PHILLIPS, Cleveland, Ohio: I should like to ask Dr. Rice one thing: Would he use tracheotomy in all severe laryngeal cases?

DR. RICE, closing: That matter has been discussed pretty extensively. At one time I thought that perhaps we had in tracheotomy, which gives absolute rest to the whole larynx, a method of relief. I tried it in a few cases in which it was not necessary, from the standpoint of obstruction to respiration, and found that the shock was sufficient to apparently do away with all the good effects of the operation. This was not so in this particular case, but it was in the others, so I have given the method up. I think that this is the conclusion of most of those who have tried that method of giving rest to the larynx.

I want to say something about Dr. Lewy's combination of formalin and glycerin. In my original experiments I tried various combinations of formalin, and found that formalin and glycerin did not have as good an effect on the pathological lesions as formalin and water.

RHINOLOGICAL EXPLANATION OF SOME SO-CALLED IDIOPATHIC FUNDUS CONDITION

I. O. DENMAN, M.D.,

Toledo, Ohio.

I THINK it is conceded that diagnosis in ophthalmology is not always an easy matter. The advent of the ophthalmoscope has added so much to our proficiency in the diagnosis of fundus diseases that we are prone to look upon it as a complete and comprehensive means of diagnosis. This is true of those conditions which cause defects in, or changes of, tissue from the normal physiological appearance. There are, however, obscure causes of visual disturbances not discernible by means of the ophthalmoscope. Many of these conditions, if uncontrolled, go on to actual pathological changes which cannot be detected by the ophthalmoscope, but when that stage is reached, are irremedial. It is highly desirable, therefore, for the ophthalmologist to make an early diagnosis, while the condition is yet in the curable stage. To that end he welcomes any and all suggestions, which may lead him in that direction.

As a positive diagnosis in this particular field is so often impossible, and a corresponding prognosis equally uncertain, it has come to be catalogued in that list known as idiopathic, which means "within itself," or a more common acceptance of the term simply means "unknown." Fortunately for us of the Twentieth Century, and much more so for our patients, the category of so-called idiopathic diseases in medicine and surgery has become so narrowed and contracted by the inroads made upon it by modern scientific research, that we can truthfully say, and yet not boastfully, that there are indeed few diseases which can not be approximately, if not accurately, diagnosed.

Up to within the last ten years or so, the broad term retrobulbar neuritis has been a most convenient one employed to cover a vast number of conditions, which lead to visual disturbances, and in some instances to visual destruction. This simply means, disease or conditions back of the eye ball, causing scotomata or reduced visual acuity, not discernible by any means of diagnosis, including the ophthalmoscope, at our disposal. The usual search for

system infections, especially syphilis, having been made and negatived and the toxic effects of poisons, such as wood alcohol, tobacco and lead being eliminated, without a finding in a particular case, the always accessible pigeon hole labelled "idiopathic" receives the patient's record.

The answer to many of the ophthalmological conundrums has been found in the discoveries of rhinology.

The influence upon the eye of nasal and sinus conditions has been well-known for at least fifty years. Orbital inflammations, simple and prevalent, resulting from infections from any or all of the sinuses adjacent to it, furnishes in itself a large field for study. However, we must pass many interesting phases, in order to consider the most vitally important pathology, namely, visual disturbances, attributable to accessory nasal sinus abnormalities.

I am sure that no one in this line of work has failed to be deeply impressed by the intimate relationship which must exist between the various fields of our specialties, eye, ear, nose and throat. Of the four, no doubt, the eye bears the brunt of sympathetic affections in excess of all others combined.

The manner in which visual disturbances or its loss is brought about, by invasion from without, has within the last few years undergone some marked revision of opinion in the minds of investigators. The earliest explanation was that of pressure. That an accumulation of excess secretion in the sinuses adjacent to the optic nerve fibres exerted such pressure upon the optic nerve that a visual impairment, temporary or permanent, followed. It is only within the last ten or twelve years that the literature shows a growing comprehension of toxemia. This theory is a much more comprehensive one and is but another instance of the well-known dangers of focal infections.

Present day medical literature is voluminous on this subject. In the short time allotted to me I cannot quote such authorities as Eversbush, Krause, Shider, Gradle and others, who unite on the theory that disease of the posterior sinuses causes a series of visual disturbances which result in blindness, temporary or permanent in 15 to 40 per cent. of all cases affected. We must think of an empyema of the posterior ethmoid cells and of the sphenoidal sinus, in all visual disturbances, especially in those in which one eye only is affected, for which we can discover no other cause.

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The ophthalmoscopic findings vary a great deal in these cases. We may find optic neuritis, or in rare cases, occlusion of the vessels with retinal or choroidal destruction. But as before stated, in their incipency the objective findings are nil and only the color field defects are detected as scotomata, which in many instances is the first step toward a correct diagnosis.

The process of invasion of toxemia from the sinuses to the optic nerve, or fundus, is believed generally to be through the lymphatic and vascular systems, with some fewer instances of direct transference through the thin bony partition wall of the optic canal, often no thicker than a cigarette paper, and through actual dehiscences in that wall. In some specimens have been found a bridge work, so to speak, which has been built up through long-continued hyperplastic ethmoiditis, and this bridge, carrying a system of false vessels, establishes a vicarious circulation. One anatomical specimen showed a bony ring thrown around the optic canal, this adventitious bone cutting deeply into the optic nerve sheath and destroying the function of the peripheral fibers.

Without further prolongation of the subject, the lesson for us, it seems to me, is this:

That the ophthalmologist is not justified in making a conclusive diagnosis, or attempting to pass finally upon these conditions, without obtaining as nearly an exact knowledge of the condition of the sinuses as is possible. In other words, I would say that no ophthalmological examination is complete without rhinoscopy, transillumination or perhaps skiagraphy.

Furthermore, so-called cases of retinitis, choroiditis, optic neuritis, incipient optic atrophy, with their visual disturbances, impairments, or its loss, will be materially lessened by an early discovery of toxemia of the posterior accessory sinuses. Now, one more point, that is this: It is not always easy to make a diagnosis of sinus infection. In the pronounced cases, with the usual attendant symptoms, it is, of course, not difficult, but in these obscure cases with insidious development, the rhinological inspection may reveal nothing abnormal. X-ray plates are not positive, and there may be entire absence of subjective symptoms. Yet there is lying dormant in these sinuses a latent infection, which can be very easily absorbed. This absorption goes on slowly but constantly, until the visual defects appear. These are the most difficult and trying cases

of all, as they defy the usual means of diagnosis. In this connection I have a suggestion to offer, which has served me well. This is the prolonged application of argyrol by means of the Dowling tampons, placed in the superior-posterior nose. This is both a diagnostic and therapeutic measure. If infection be present a reaction occurs to the presence of argyrol simultaneously invading the tissues. This not only serves as a diagnosis, but if followed up will arrest the process and in many instances restore the visual function.

SEQUELS OF ACUTE EPIDEMIC ENCEPHALITIS.—Morris Grossman, M.D., *Journal of A. M. A.*, Vol. 78, No. 13. In a study of ninety-two cases from one to three years after recovery, Dr. Grossman offers the following tentative prognosis:

1. Probably less than 20 per cent. of the patients who become ill with acute epidemic encephalitis die during the acute stage of their illness, as only the most severe cases, as a rule, reach the hospital.

2. Of those who survive the acute stage, about 10 per cent. may develop a progressive disease of the central nervous system.

3. The remainder will make a good functional recovery in from six to twenty-four months after the acute infection, with the probability of progressive approach to normal after that period.—(Grossman, Morris, "Late Results in Epidemic Encephalitis," *Arch. Neurol. and Psychiat.*, 5:580; May, 1921).

The writer finds that the above hopeful outlook is not substantiated by further observations of these patients.

Out of the ninety-two cases examined there were ten cases that had recovered completely. The time that had elapsed since their acute illness varied from one to three years. Fourteen cases, while able to work, had some slight impairment of cranial nerve function or complained of psychic disturbances. Sixty-two patients showed a serious involvement of the central nervous system that tended to be more or less progressive.

Forty-two cases from the sixty-two patients revealed a clinical syndrome that closely resembled paralysis agitans. W. G. S., Jr.

EXTRACTION OF THE CLEAR LENS FOR HIGH DEGREE OF PROGRESSIVE MYOPIA

BY J. IVIMEY DOWLING, M.D.,

Albany, N. Y.

EXTRACTION of a clear crystalline lens in cases of high myopia is no new procedure, but was theoretically considered as early as 1703 when Boerhaave called attention to the fact that after cataract extraction in high myopia the patient had good vision without a glass, or with only a weak plus lens. In 1776 Abbe Desmonceaux first recommended the operation in children with high myopia and gave Wentzel the credit of being the first to successfully perform the operation.

The technic of the earlier operation being less perfect than of today was the cause of the relatively high percentage of failures as also was the lack of knowledge of the proper indications. This allowed the opponents, such as VanGraefe and Donders, to give powerful arguments against this procedure.

However, Adolf Weber, in 1858, performed some successful operations. In 1889 Fukala, with the better aseptic technic of operating, founded by Lord Lister, was the first to place this operation on a firm foundation.

Since Fukala's observations and reports, there have been many cases reported and much has been written about the subject, especially on the Continent where myopia is of much more frequent occurrence than in this country where more attention is given to hygienic treatment, the treatment of complications, such as sinus and other focal infections, and also to the correction with proper glasses.

The purpose of the present writing is to report two cases operated by the author in which the lenses were sufficiently clear to permit study of the deeper parts of the eye and in which the myopia was of very high degree. The results in the two cases were so satisfactory that it seems well to record them with observations as to the reasons for performing the operation and a statement as to the present status of the operation by the profession at large.

CASE No. I.—Miss Lizzie S. Age 42. First consultation January 11, 1917.

Patient gave history of having worn glasses since early childhood, vision having become progressively impaired until at time of first consultation she was unable to use her eyes for any purpose and had difficulty in getting around.

With a — 20 Ds patient could determine the presence of large objects.

Rough estimation of the visual fields indicated that the peripheral vision was useful.

Ophthalmoscopic Examination.—Lens of each eye clear. Vitreous clouded and many dense opacities observed. Unable to study the fundus because of the condition of the vitreous.

Chronic hypertrophic condition involved the nose and accessory nasal sinuses. No definite organisms determined in the nasal discharge. Presence of a catarrhal condition alone being demonstrated.

Advice.—Recommended hospital treatment and irrigation of the maxillary sinuses. This was done February 9, 1917, and daily toilet of the nose prescribed, the method recommended being that originated by the writer and known as the Dowling method. This method is fully described in the articles heretofore written by the writer.

Under treatment until March 15th, the vision improved to the degree of 15/70. This vision was obtained only by twisting the head and was indirect. The ophthalmoscope showed the media to be clearer, but at this date no definite study of the fundus was possible.

May 28, 1917.—Patient entered the Homœopathic Hospital of Albany, N. Y.

May 29, 1917.—The right eye was operated and small iridectomy performed. The operation was attended with great difficulty because of the patient's excessive nervousness. There was also considerable hemorrhage following the iridectomy, the anterior chamber being filled with blood.

This steadily improved until June 5, 1917, when daily training with instrumental manipulation was instituted. This being done with the idea that the lens could be extracted better under cocaine anesthesia than under general. The daily manipulation continued until June 12th, when the second operation was performed.

This consisted of a broad keratotomy followed by capsulotomy.

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The lens mass was then disintegrated with a small blunt probe and the lens substance washed out with the aid of a syringe. Nucleus came away satisfactorily and the result was a clear black pupil. Eserine was instilled immediately following the operation and the evening of the same day a 1 per cent. atropin solution was used.

June 18, 1917.—Patient discharged from hospital.

The myopia of the right eye was then reduced from 20 Ds to 10 Ds. Still at this time it was impossible to determine the actual condition of the fundus.

Dionin solution, 5 grs. to the ounce, was prescribed for both eyes to be used twice a day. Also the continued treatment of the nose to be conducted by the family physician, Dr. Crawford Green, Troy, N. Y.

December 12, 1917.—Needling operation was performed. Following this operation there was a decided improvement in the transparency of the media, and by March 15, 1918, it was possible to study the fundus, which exhibited an extensive posterior staphyloma and degenerative changes in the macular region.

Vision improved at this time to a degree that made it possible to prescribe a — 2 Ds which afforded 20/200 vision. Degeneration of the macula made the near use of the eyes impossible.

Points of interest in this case: Operation successful. Following the extraction of the lens the degree of myopia greatly lessened. Vitreous became sufficiently clear to permit the study of the fundus, although many opacities remained. The vision is useful to the degree that the patient is now able to perform many of the duties incident to general housework. Unable to read because of the degeneration of the macula.

Furthermore much of the improvement seemed to result after the relief of the chronic catarrhal sinusitis.

Glasses prescribed: O. S. — 2 Ds.; O. D. Blank.

CASE No. 2.—Mrs. Anna W. Age 55.

HISTORY.—Has been under treatment since 1909 with gradual loss of vision because of progressive myopia and cardio-vascular disease.

In May, 1921, the vision of the right eye was reduced to 1/200 — 20 Ds giving 4/200. The left eye's corrected vision equalled 20/50, but vision was steadily failing.

A rough estimate of the visual fields showed excellent light projection.

The condition seen by the ophthalmoscope showed a clear lens except for the dense nucleus, the vitreous being too clouded to permit study of the fundus. Complicating the condition was a chronic hypertrophic condition involving the nose and accessory nasal sinuses. This was purely catarrhal as no organism could be demonstrated.

The usual evidences of cardio-vascular disease were present.

Operation for the right eye was decided upon, and iridectomy performed June 14, 1921. At this operation there was a moderate hemorrhage. While the recovery was good it was slow and because of her systemic condition, she was not operated for the removal of the lens until December, 1921, at which time the lens was extracted in capsule without loss of vitreous. The recovery from this operation was good, and in early February, 1922, the vision had improved to 10/200 with a — 3 D cyl., axes 90 degrees = 20/200.

The catarrhal complication was treated and the patient has retained useful vision with the operated eye.

The type of operation in these two cases was different.

The first case cited; the patient was of a highly nervous type in which it seemed unwise to give a general anesthesia and a daily training with instrumental manipulation was instituted over a long period before operation could be attempted.

The steps in the first case were first iridectomy; second, extraction of the lens with capsulotomy; and, final, needling operation.

In case No. 2, it was deemed best to perform the operation under local anesthesia and the extraction in capsule was decided upon because of the large nucleus and dark character of the lens, the lens being of the amber type and firm in consistency. It seemed likely that there was less danger in attempting the extraction in capsule rather than to leave behind a thickened capsule to cause complications subsequent to the operation.

In the second case no needling was needed.

Both cases showed decided improvement after operation and the cloudiness of the vitreous was greatly overcome after treatment of the sinus complication.

Both cases secured useful vision.

The first case from being a dependent became an independent, able to do housework, but unable to read.

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The second case secured improved vision and was able to read large type such as head lines in the paper.

The reduction of myopia in the first case was originally 10 Ds and later increased to 18 Ds.

The second case, the condition of myopia was changed from — 20 Ds to — 3 D cyl.

Both cases are recorded as successful and the results satisfactory to the patients. They are now ready to submit to operation upon the other eyes if circumstances seem to warrant.

It is interesting to note a composite of the indications as noted by various operators. It seems to be generally agreed that the myopia should at least be 12 Ds.

Snellen believed it to be a good operation for children, but other operators agree that it is an operation that may be performed at any age, providing the health of the patient is satisfactory.

Wilmer states that the possible range of improved vision is from 11 to 24 Ds, and he is pleased in securing a final myopia of 2 or 3 Ds.

The dangers incident to operating an eye in the condition of progressive myopia are the same as those found in any cataract extraction, but in addition there is more likely to be a detached retina, loss of vitreous or retinal hemorrhage.

A composite of the various conclusions shows that the operators believe that when the operation is successful the further progress of the myopia is controlled.

The writer's experience in the treatment of progressive myopia leads to the statement that in his belief accessory sinus disease is a very frequent reason for the change in the eyes noted in progressive myopia for in a large series observed over a period of years the cases of progressive myopia have exhibited either deflected septa or some abnormal state within the sinuses.

In the two cases operated the condition was one of hypertrophic rhino-sinusitis.

Therefore, as a corollary to the conclusions of others the writer believes that in cases of progressive myopia, the nose and accessory nasal sinuses should be investigated and any abnormal state relieved. Septal or sinus operations, if indicated, should precede cataract extraction, and subsequent to the operations upon the eyes, continued treatment of the nose and sinuses should be instituted.

ABSCESS OF THE NASAL SEPTUM FOLLOWED BY ORBITAL AND CAVERNOUS SINUS INFECTION

BY JOSEPH V. F. CLAY, M.D.,

Philadelphia, Pa.

ABSCESS of the nasal septum occurs as a result of falls or blows upon the nose and less frequently following operations upon the septum. If, upon receipt of injury to the nose, the septal cartilage is bent, broken or folded upon itself, there results a separation of the mucoperichondrium from the septum. Into this space, between the cartilage and the mucoperichondrium, hemorrhage or serous effusion occurs which tends to further the separation of the soft structures. Infection of the accumulated fluid occurs and there results the formation of an abscess. If the cartilage is attacked by the suppurative process, flattening of the bridge of the nose may result.

In all cases of traumatism to the nose, septal abscess should be apprehended. The symptoms may not come on for 24 to 48 hours after the injury. Given the history of injury to the nose, with or without bleeding, the occurrence of obstructed nasal breathing and the presence of a boggy swelling presenting from the median line into the nares, a collection of fluid beneath the perichondrium should be suspected. Examination with a probe will very early determine separation of the mucoperichondrium and the presence of fluid.

Establishing free drainage by incision through the soft structures to the cartilage, on one or both sides as necessary, will usually prevent serious damage. Drainage should be maintained until supuration ceases. It is important to acquaint the patient of the chances of deformity and the necessity of regular attention until the condition has cleared up.

On July 19th, 1920, we were called to see Mrs. J. H., age 68 years, who four days previously received a bump upon the nose. A few hours later the nose became painful, swollen and the breathing obstructed. On the fourth day the temperature registered 102 degrees F., and associated, were intense pain in the head and a

tendency to mild delirium. It was at this juncture that we were called to see the patient. The nose and left side of the face were indurated, brawny and exquisitely tender; the left eyelids were slightly swollen; there was marked subocular oedema; the eyeball was normal. The nares were completely obstructed by a ballooning of the septum. Free incision in the mucosa on the left side of the septum evacuated a large amount of thick pus and portions of blood clot. During the succeeding twenty-four hours drainage from the septum was free, but the general condition did not improve, the temperature continuing moderately high. Associated, were drowsiness, intense headache and delirium, although the patient could be aroused readily to intelligent conversation. The oedema of the left eyelids was marked, there was chemosis of the bulbar conjunctiva and the left fundus showed large tortuous veins. The integument of the nose and left cheek was indurated, vesicular and a line of demarkation was in evidence, giving the picture of erysipelas. The skin of the forehead was oedematous. On July 22nd, the patient became quite irrational, the temperature reached 104 degrees, and within a few hours dropped to 99 F., accompanied by severe sweating. Several of these temperature excursions were noted in the succeeding twenty-four hours. The left eye became proptosed with limitation of motion in all directions. The left pupil was dilated and fixed and the conjunctiva was now chemotic throughout. The left fundus showed marked swelling of the disc with large tortuous veins. During the next day the conjunctiva of the right eye showed chemosis and the veins of the right fundus were overfilled. The nose at this time was free of discharge. The patient was very septic and rapidly passed into coma and died.

The venous supply of the nose forms a network in the tunica propria of the nasal mucosa. Venous blood is returned from this network by three chief pathways: (1) Into the anterior facial vein; (2) into the sphenopalatine vein, and (3) into the ethmoidal veins. The ethmoidal veins communicate with the ophthalmic vein and the veins of the dura. The ophthalmic vein is directly continuous with the cavernous sinus. An anterior ethmoidal vein leads from the nasal mucosa and passes through the cribriform plate ending in a venous plexus of the olfactory bulb, or in one of the veins on the orbital aspect of the frontal lobe of the brain. Undoubtedly the venous return flow must act as a factor in the intracranial ex-

tension of inflammatory conditions of the nose and nasal accessory cavities.

The lymphatic drainage of the nose forms a ventral and dorsal group. The ventral group courses mainly in the groove between the triangular cartilage and the bone and between the cartilage of the wing. Their trunks empty into the facial and sub-maxillary nodes. The lymphatics posteriorly drain into the deep cervical chain and retropharyngeal nodes. The sub-dural space directly communicates with the extracranial lymphatics and the perineural spaces of the olfactory nerve.

Thus we see that cases of nasal infection have ample passage-way into the cranial cavity. It would seem from the clinical aspect of our case that infection was carried cranial-ward by the venous channels. The onset of the subocular oedema followed by chemosis of the conjunctiva, the proptosis and limitation of motion of the eyeball with the fundus findings, plus the subsequent development of conjunctival chemosis of the right eye, would support the diagnosis of venous involvement.

It is to be regretted that bacteriological investigation and autopsy findings cannot be incorporated in this report. These omissions were beyond our control. We feel that the case bears reporting to emphasize the tragic outcome of what frequently is a simple condition, and, furthermore, it emphasizes the necessity of great care in performing nasal operations.

A NEW EYE, EAR, NOSE AND THROAT JOURNAL.—The first number of the *Eye, Ear, Nose and Throat Monthly*, published by the Professional Press, Inc., under the able Editorship of Dr. Thomas G. Atkinson, has been read with a great deal of enjoyment. It should seem that the publishers should have little difficulty in crowning their efforts with success, so long as they continue to adhere to the policy of presenting to the profession the practical side of eye, ear, nose and throat subjects in a practical way. As collaborators in disseminating knowledge in the science of ophthalmology and otolaryngology the editors have our best wishes for success.

W. G. S., Jr.

THE THROAT DEPARTMENT IN THE LAURA FRANKLIN FREE HOSPITAL FOR CHILDREN IN NEW YORK CITY

JOHN B. GARRISON, M.D.,

New York, N. Y.

IN this hospital the patients consist entirely of children between the ages of two and twelve. The throat department receives the most of its cases from the public schools and they come with the request that tonsils and adenoids be removed. The writer is the chief of this department, and refuses to operate upon every case of slightly hypertrophied tonsils, preferring to depend upon the removal of the adenoids to relieve the nasal obstruction which is succeeded in many cases by a shrinking of the enlarged oral tonsils. In the service of the past twenty years over 10,000 cases have been operated, perhaps 80 per cent. being for both tonsils and adenoids.

The children are requested to present themselves at the hospital by 9 o'clock in the morning, without breakfast. A physical examination by the interne is made and they are dressed in the hospital gowns ready for the operation. The anaesthetic used in all cases has been chloroform and not one death has followed its use during the operation. One case died some time after the operation was finished, but was due to other causes.

The chloroform is administered by dropping it upon a light gauze covered frame, giving air in abundance and the anaesthetic is stopped with the proper amount of relaxation. The adenoids are first removed with the adenotome, then the tonsils are rapidly enucleated by the finger and the removal effected by the snare or the tonsillitome, the whole operation from the commencement of the anesthetic to the carrying of the child to the bed usually occupying about five minutes. The hemorrhage is usually free for a minute and then subsides, so that in all these years there has not been one serious hemorrhage recorded in the hospital from a tonsillectomy or adenectomy.

The little patients are kept in bed according to their apparent needs, some going to their homes in the evening of the same day and

others, who seem to need better nourishment than they receive at home, are kept from one day to a week; and all are requested to report to the hospital anything which may seem to be wrong in their estimation. The most frequent return is because the parents notice a white patch on the pillars, which is part of the normal healing process, and when this is explained, no further attention is asked for. We believe that the administration of chloroform is as safe as any other method in these cases, if proper attention is given to see that that it is dropped and not spilled on the mask and that air in abundance is given with it. The technique is most simple as used here and the child is not frightened by the preparations and promptly recovers consciousness after the operation.

19 East 111th Street.

At a meeting of the Philadelphia Laryngological Society, April 18, 1922, Dr. Bridgett introduced what appears to be a real contribution to the surgery of the mastoid. He describes a ridge that appears within the cellular mastoid, made by the upward projection of the digastric fossa. The ridge runs forward along the floor of the cellular structure and terminates anteriorly at the bony capsule covering the lower end of the stylomastoid foramen. Dr. Bridgett suggests this anatomical feature as a director to the location of the lower end of the seventh nerve, from which point the bony capsule of the nerve can be followed upward with the avoidance of injury that often takes place when the higher cells are first cleared up. The paper has not yet been published.

D. M.

REFLECTIONS

DANIEL WITWER WEAVER, M.D.

THERE is hardly a day passing but what some one consults me in regard to an annoyance in the throat following a tonsillectomy, sometimes as late as two or more years after the operation.

The most frequent symptoms of complaint are dryness of the throat, a rawness, a hindrance in swallowing, and a frequency of bronchial coughs. Upon an examination I usually find a dry pharyngeal inflamed mucous membrane. In many cases the posterior wall is denuded of epithelium. Some cases have much scar tissue or imperfect or incomplete enucleation, but to my surprise the larger percentage of cases have had perfect enucleations without injury to the palatal pillars, nor much scar tissue.

Upon a close analysis of the anatomical structure of the tonsils the cause of the dryness with its train of associated symptoms became manifest. The tonsils are in their embryonic formation simply, folded, or reduplicated layers of mucous membrane. They contain epithelial covering, the full depth of the crypts. The epithelia in the crypts has the same power of reproducing itself as it has on denuded surfaces in the nose or throat. The mucous membrane of the tonsils, or rather the mucous glands of the tonsillar mucous membrane, have the same function as the mucous glands in the pharynx, nose, larynx or trachia—secreting of a moisture with mild germicidal property.

If we remember that the tonsils are not glands of a purely lymphatic type situated under the mucous membrane, but that they are complex glandular structures of the mucous membrane—that their function is similar to other mucous membrane of the respiratory tract. The lymphatic may seem more abundant than in the nasal, post-nasal or pharyngeal mucous membrane, but in reality nature “tucked in bundles,” so to speak, much mucous membrane, which, under the influence of the superior constrictors during the effort of swallowing expels from the crypts mucous moisture.

It is true that all the nasal, post-nasal and pharyngeal mucous membrane is abundantly supplied with lymph nodules, and mucous

glands to aid in the protection against systemic invasion from these exposed respiratory surfaces, and a reckless destruction of mucous membrane of the nose is followed by dryness, and ultimately atrophic change.

The rhinologist of today does not do the septum operations of twenty or more years ago, but elects to do the submucous in order to eliminate the dryness and atrophy which followed the older operation; for the same reason does he preserve all mucous surfaces consistently in all intra-nasal operations. Post-nasal dryness occurs when much mucous membrane is destroyed during the adenoid operation.

May it not be within bounds of reason to attribute the dryness of the pharynx, the rawness, atrophies which follow, the susceptibility to bronchitis and the "flaming" up of latent pulmonary tuberculosis, to the destruction of many mucous glands and defensive lymph nodules by tonsillectomy?

These end results should make us equally rational in our operations on the throat as we are in our intra-nasal operations. Mucous membrane is equally important throughout the whole respiratory tract.

When we see the cases of atrophic changes in the tonsil from forty on, may we not appreciate that this is what is happening in the solitary and Peyers patches of lymph glands in the intestinal tract as a natural sequence of advancing years, and not necessarily pathological in character?

CONGENITAL STENOSIS OF THE NASO-LACHRYMAL DUCT.—In the proceedings of the Pittsburgh Ophthalmological Society (*Penna. Med. Jour.*, April, 1922), McMurray reports two cases of congenital naso-lachrymal duct stenosis with spontaneous recovery. He reviews also other reported cases of spontaneous recovery and points to the fact that prior history of inflammation is an important consideration in the determination of interference. If such history of inflammation is present, dilatation should be undertaken early, at a year and a half to two years; if there is no history of inflammation one can wait for three years, hoping that nature will relieve the stenosis.

D. M.

STRABISMUS CASES

C. GURNEE FELLOWS, M.D.,

Chicago, Ill.

ALL of us are often discouraged at the results, or lack of them, in our cases of strabismus, and particularly when complicated with amblyopia. It is hard to make patients realize that time must elapse before results are apparent, and I fear that many of our cases are inconstant, not only with attendance upon their original oculists, but possibly with any oculist. A recent re-examination of such a case, twenty years after, gave me some encouragement and a short report may be helpful.

Francis T., aged four and one-half, came in 1902, with convergent strabismus and "queer eyes." His father, a patient of mine, was a hyperope, getting comfortable vision with a $+ 6.00$ O. D., and a $+ 3.50$ O. S.

Under full atropine for the small boy, a hyper-metropia of $+ 5.00$ was established. I prescribed $+ 3.00$ for constant use, for I believe it is better in early childhood to begin with a glass which will easily be accepted, than to try to put on a full correction at once, thereby running the risk of finding that it is worn only part of the time. This, at least, worked out here. His eyes straightened out, the "queer look" disappeared. Kindergarten work did not aggravate him, and by the time the boy was a year older, he accepted and wore a $+ 4.00$.

His people were so satisfied with the results that I did not see him for a couple of years, at which time he accepted $+ 4.50$, and from that day to this, seventeen years later, has neither changed glasses nor had any inconvenience whatever. He has binocular vision for distance and near, stereoscopic fusion and doesn't know what trouble he has escaped. In short, except for hyperopia, he has two perfectly normal eyes.

A contrasting case is Esther B. Seen first at the age of three months, with very marked, constant convergent strabismus in the left eye only. The use of atropine in the good eye at the age of one and one-half years made no improvement in the ability to fix

with the left one; neither did an exclusive pad kept up for months, accomplish anything by way of development of an eye that probably was amblyopic. At the age of three, under full atropine, I prescribed a + 3.00, something less than the total amount of hypermetropia and if ever a child had the opportunity to develop a backward eye, this one had.

Neither with atropine, glasses nor exercise, could we overcome the convergence. It may be recalled that in 1905 our methods were somewhat different than they are now. According to these, I operated upon the convergent eye, doing an advancement and partial tenotomy and went ahead with the atropine, glasses, refraction, occlusion bandages, office treatment and home exercises. The father and mother spent hours trying to develop sight in the poor eye and with the assistance of glasses the child grew up, they and I never slacking our efforts. By the time she was ten years old, with comparatively normal vision in the right eye, she could read nothing but newspaper headlines with the other one.

At the present time, which is twenty years later, the girl has no more vision in the amblyopic eye than she ever had. However, she has been carefully guided in the choice of studies, consequently able to avoid all strain, and will, this year, graduate from a prominent university. Furthermore, the eye, although amblyopic, remains perfectly straight, thereby not marring the good looks of this really beautiful girl.

30 North Michigan Boulevard.

A NEW BOOK

THE PHOROPTOR.—By Henry DeZeng. Published by the author, Camden, N. J. Price, \$3.00.

Contains 120 pages of practical information on the subject designated by the title. Although the illustrations contained in this small volume cover products manufactured by this well-known firm, the book supplies general information of no small value to the practicing ophthalmologist and is well worth the trouble of securing it.

G. W. M.

AN UNUSUAL EYE CASE

FRED C. SAGE, M.D.,

Waterloo, Iowa.

THE subject of this case history is a man of thirty-two years of age. He was raised on a farm and comes from a good and a fairly large family, all of whom are in good health. The patient himself had good health until about four years ago. He was a salesman and a man of fairly good habits, though using tobacco and some alcoholics.

His trouble apparently began with a carious left upper bicupid tooth. He had the tooth treated, but as the symptoms were not relieved he later had the tooth extracted. Neither did this give any relief, and patient now became very much worse, and his sufferings had become intense. The pains in the left side of face were so severe he could sleep very little, and the pain on attempting to swallow was so great that he could take very little nourishment, and so he lost greatly in weight. The pains radiated in all directions from the face and extended down into the neck. On one occasion he consumed a whole quart of choice old whiskey in an attempt to get relief during one night. Since the enactment of dry laws one might consider that fine treatment, but our patient relates that he never closed an eyelid.

At this time our patient had a well developed case of trifacial neuralgia of unusual severity, and was referred to Dr. Hugh Patrick of Chicago, the well-known neurologist. The treatment given at this time was an injection of alcohol at two points, one above the maxillary antrum and the other into the dental foramen. This treatment gave immediate and absolute relief of all pain for six months and three days. At first he had only slight pains, but eleven months after the injection of alcohol he became so bad that he submitted to a radical operation for relief. This operation was performed by Dr. Addison, at the Mayo Clinic, Rochester, Minnesota, and the Gasserian Ganglion was incised at the posterior root. This gave immediate and permanent relief of all his pain for about two years.

Now then for eye symptoms. Following this ganglion oper-

ation the eye on the affected side has always remained red, with numbness, dryness, a decided lack of secretion and increasing impairment of vision. The secretory glands through inhibition of their nerve supply, do not function anywhere near normal. When out in the wind the eye dries up and becomes irritated and inflamed. Until recently, when patient remained indoors the eye conditions would clear up and patient would see better. Recently, however, the vision is constantly poor in the affected eye, the left, and he cannot count fingers, while in the right eye he has the normal 20/20 vision.

Of special interest is his correction for glasses, given soon after his operation by Dr. Gifford, of Omaha. It is:

Right + .50 cyl. axis 90 degrees.

Left + 5.50 cyl. axis 180 degrees.

The presumption is strong that a marked astigmatism was produced in the eye as he had a previous history of normal vision.

Another striking peculiarity of this case is a dense opaque band seven m.m. wide, extending horizontally across the cornea, and above and below this, a slightly transparent area of cornea corresponding to the part covered by the lid margins. There is no ulceration of cornea and no pain, in fact, an anaesthesia of cornea and conjunctiva are present with very slightly diminished intra-ocular tension. The treatment seems of little use and the prognosis is unfavorable with enucleation a probable eventuality.

The case described would, of course, be one of neuroparalytic keratitis following gasserian ganglion operation.

614 First National Building.

ABSTRACTS

INDICATIONS FOR OPENING THE MASTOID CORTEX.—Dr. Francis P. Emerson, *The Laryngoscope*, April, 1922. Dr. Emerson enumerates the indications that justify the removal of the mastoid cortex under three heads: "First, to remove a pyogenic focus threatening the life of the patient. Second, to conserve hearing. Third, to prevent a chronic mastoiditis." W. G. S.

EXOPHTHALMOS CAUSED BY EMPYEMA OF THE ETHMOIDAL AND SPHENOIDAL SINUSES.—In April, 1922, issue of the *Pennsylvania Medical Journal*, Dr. Margaret A. Warlow reports a singu-

larly severe exophthalmos due to nasal sinus empyema. The interesting features of the case were the gravity and persistence of the eye symptoms and the absence of subjective sinus symptoms. Eye examination showed in addition to the exophthalmos, corneal opacities in the right eye from ulcers about three months previous, injection of bulbar and palpebral conjunctiva, temporal fields cut, the left to 30 degrees, the right from 40 to 60 degrees. Both fields were cut a little to the nasal side. Vision without glasses in both eyes 5/45.

Nasal examination showed the nasal chambers free in their respiratory portion; septum deflected to the left, causing firm pressure in the ethmoid region; right middle turbinate presses on the septum; mucous membrane normal in appearance; posterior ends of the turbinates enlarged, and a heavy, muco-purulent discharge in the naso-pharynx; X-ray showed sphenoids cloudy. The patient was suffering severe pain in the head and eyes, worse over the left eye.

A sub-mucous resection was done and followed by exenteration of left ethmoids, and by opening of the left sphenoid. Exophthalmos decreased in both eyes following operation and pain decreased. Vision improved in the left eye. Four weeks later the right middle turbinate was removed, the ethmoids exenterated and the sphenoid opened—more improvement occurred in relief of pain and in diminution of exophthalmos. When last examined, now two years after onset, the exophthalmos has nearly entirely disappeared, and she has no pus in either nares.

A most interesting collection of case histories, culled from literature, accompanies the article. D. M.

CASE OF EARLY HODGKINS DISEASE IN WHICH ENDOSCOPY LED TO THE DIAGNOSIS.—Dr. Lee M. Hard, *The Laryngoscope*, April, 1922. The case reported is that of a female, 20 years of age, who had a dry cough for one and a half years. She had occasional hoarseness. In four months she had lost ten pounds in weight. There was present a small gland behind the left clavicle. Endoscopic examination revealed a constriction one-half inch below the carina. Manipulation of the constriction produced intense cough-

ing. Radiographic examination showed a dense shadow that was super-imposed upon the aorta.

There is a shadow on the left side that arises from the base of the lung, but does not have any connection with the aorta. Pathological report of the examination of the supraclavicular lymph node showed many of the findings of Hodgkin's Granuloma. Subsequently the patient developed complete recurrent paralysis of the left vocal cord.

W. G. S.

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Editorial

POST-OPERATIVE ROUND CELL INFILTRATION OF NASAL SEPTUM

EVERY physician, who practices operative work upon the nasal septum, has noticed the frequency with which a bilateral thickening of the nasal septum occurs, following such operations.

This thickening, when examined pathologically, is found to be due to a round cell infiltration. Thus it is closely allied with those thickened conditions which are frequently found in luetic patients.

Observation of a number of these cases will make apparent the fact that there must be some underlying causative factor within the patients themselves.

Careful study of the endocrines should be instituted, for as Selfridge has pointed out, it is frequently the lack of harmonious endocrine action that results in post-operative complications in surgery of the nose and throat.

Such cases call for a Wassermann examination. If the serological test proves negative, the patient should be given mercury, preferably the red iodide, in doses of gr. 1/10 or 1/100, repeated as the physician may decide.

If the patient shows material improvement as the result of such treatment, active antiluetic measures should be instituted.

Dr. Mackenzie has often drawn the attention of his students to this very subject, and has frequently demonstrated that there appears to be some analogy between the clinical appearance of this post-operative thickening of the nasal septum and lues. This would seem to be further substantiated by the relief which accrues from the use of mercury.

EDITORIAL

Perhaps with the advances that will be made in the study of the endocrines, we shall find that many of the peculiar and persistent manifestations of syphilis are due to the disturbance in the mechanism of one or several of these delicately functioning glands.

WILLIAM G. SHEMELEY, JR.

DIVIDING THE SPECIALTIES

THE writer was much surprised to hear a recent discussion on the division of the specialties, and to have it brought again to his attention that there are still men in the Profession and in some hospitals who link the eye and the ear in their practice and eliminate the nose, nasopharynx and pharynx. It had been his opinion that this old division of the specialties was obsolete and had been dropped. He can readily understand a connection between the eye and the nose, with its neighboring sinuses, and the ear and the nose, nasopharynx, etc., but how anyone can connect the eye and the ear and eliminate the others is beyond his understanding.

If a division of the specialties be made, it would seem logical that it should be along the following lines: the eye alone; the eye and nose; the nose and throat, or the nose, throat and ear.

L. E. H.

A PERSONALLY CONDUCTED TOUR FOR STUDY

IN these days of concentrated effort and intensive time-saving it is small wonder that the method has been applied to pleasure.

The "Personally Conducted Tours" of the various agencies are well known to all. Along such lines, Dr. George W. Mackenzie decided to conduct a tour for intensive study in Vienna from the world's best teachers in Oto-Laryngology—Alexander, Neumann, Ruttin, Frey, Tandler, Hajek, Hirsch and Fein.

The plan met with such a ready response, that from an original limited class of fifteen, it was increased to thirty-four.

Many whose applications arrived too late to enter this year's

EDITORIAL

class signified their desire to be entered for a future trip, if conditions should warrant a repetition.

Those who made the trip are:

Dr. G. W. Mackenzie, 1831 Chestnut St., Philadelphia
Dr. G. D. Arndt, Mt. Vernon, Ohio
Dr. Wm. C. Behen, Post Graduate School, Philadelphia
Dr. H. Bierman, Bloomsburg, Pa.
Dr. Frank Bridgett, Post Graduate School, Philadelphia
Dr. John M. Carter, Detroit, Mich.
Dr. R. S. Chappell, Indianapolis, Ind.
Dr. W. D. Chase, Bethlehem, Pa.
Dr. R. C. Cooper, Pittsburgh, Pa.
Dr. B. N. Colver, Battle Creek, Mich.
Dr. Cress, Post Graduate School, Philadelphia
Dr. J. A. Ferree, Columbus, Ohio
Dr. A. E. Forster, 956 N. Fallon St., Philadelphia
Dr. E. S. Hallinger, Haddon Heights, N. J.
Dr. Wm. C. Ivins, Trenton, N. J.
Dr. Geo. B. Jobson, Franklin, Pa.
Dr. H. A. Laessle, 13th and Spruce Sts., Philadelphia
Dr. J. J. McDermott, St. Joseph, Mich.
Dr. Jos. J. McNamara, Huntingdon, Pa.
Dr. P. S. Peck, Denver, Colo.
Dr. John L. Redmond, 17th and Spruce Sts., Philadelphia
Dr. Seigall, Post Graduate School, Philadelphia
Dr. J. J. Smith, San Francisco, Cal.
Dr. W. Stevenson, Quincy, Ill.
Dr. A. L. Stotter, Cleveland, Ohio
Dr. Phil. S. Stout, 4701 Chester Ave., Philadelphia
Dr. E. V. Thompson, Franklin, Pa.
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Dr. E. H. Truex, Post Graduate School, Philadelphia
Dr. Chas. F. Voorhis, Palmyra, N. J.
Dr. Carden Warner, Washington, D. C.
Dr. S. B. Westlake, St. Louis, Mo.
Dr. Chas. P. White, Wilmington, Del.
Dr. Walton H. Williams, Middletown, Ohio

WILLIAM G. SHEMELEY, JR.

COMMUNICATION FROM THE SECRETARY OF THE O., O. & L. SOCIETY, DR. NEIL BENTLEY

Fellow Members of the O., O. and L. Society:

All of the members (122) who registered at our Chicago meeting will know that we had one of the finest meetings ever held.

Our clinical session at the Cook County Hospital included a number of laryngeal cases demonstrated by Dr. Frank J. Novak, Jr.

In the ophthalmic clinic by Dr. George Suker 77 cases were presented. He had gone to a lot of trouble in wiring the room so that every patient had an optical lamp directly behind him for use in the examination of fundus.

EDITORIAL

I am enclosing the list of cases demonstrated that speaks for itself.

The regular program has been printed before and all who saw it will know that every part of it was high class.

Remember that we are going to have an equally good meeting next year. Plan now what you can do to help along. Plan to be there.

Very cordially,

NEIL BENTLEY, *Secretary*.

OPHTHALMIC CLINIC OF DR. GEO. F. SUKER, COOK COUNTY
HOSPITAL, CHICAGO, JUNE 20, 1922

Nephritis — Interstitial and Parenchymatous — Eight cases, showing the fundus difference between the two types of nephritis, —also the various early and late changes.

Cardiac Lesions — Ten cases — various valvular heart lesions — compensated and uncompensated — showing transmitted peripheral venous pulsation in retina and arterial pulsation.

Anaemias — Six cases — Leucaemia, pernicious and secondary. Showing the fundus differences and the various vessel changes.

Syphilis — Six cases — Demonstrating the peculiar retinal pigment changes without symptoms — by which it is possible to make a strong tentative diagnosis of syphilis.

Arterio-Sclerosis and Hypertension — Seven cases — Showing the various fundus vessel changes and degrees of arterial hypertension with senile atrophy changes in fundus.

Brain Tumor — Two cases — Showing optic atrophy secondary to papilloedema and picture simulating nephriticretinitis.

Melanoma of Choroid — One case — boy of nine — Convergent strabismus O. D. fixing eye. In upper outer quadrant of right fundus a Mulberry melanoma — vision 20/20 — quiet.

Scurvy — One case — showing a posterior and anterior stellate capsular cataract bilateral with guttate cortex.

Diabetes — Four cases — Showing the incipient retinal and choroidal changes as well as the advanced changes.

Acute Nephritis — One case — Patient aged fourteen — Showing the doughy and pasty appearance of retina with venous dilatations.

Chorioiditis Guttata — One case — Characteristic case — probably syphilitic.

EDITORIAL

Atrophic Chorioiditis—One case—Due to senile changes.

Retinitis Pigmentosa—One case—Showing the characteristic waxy disc—of years standing benefited by x-ray treatment.

Optic Disc Cupping and Anomalies—Five cases—Showing corkscrew vein in physiological cup and the four types of Elschnig's physiological cupping.

Pulsating Exophthalmos—One case—Gunshot wound left mastoid region causing a left sided cavernous sinus aneurysm with left internal carotid artery and marked exophthalmos left eye. Ligation of left common carotid—success in every particular.

Intra-Orbital Tumor—One case—negro—marked fixation of globe—right—normal vision. Modified Kroenlein operation showed an extensive inflammatory mass springing from lacrimal gland.

Rodent Ulcer—Two cases—Both involving the upper and lower lids right side—necessitating extensive plastic surgery; in one case an exenteration.

Obliterated Orbit—Burn and Injury. Two cases—Both upper and lower cul-de-sacs were restored as well as a socket.

Tabetic Optic Atrophy—Two cases—One showing a marked improvement—the other holding its own—treated by intraventricular injection of Mercury in 1917 and 1919—Wassermann negative ever since. Improvement both in acuity and field.

Circumpapillary Chorioiditis—One case—A tubercular patient in which this lesion is most probably tubercular.

Macular Hole—One case—Hemorrhagic macular chorioiditis with distinct macular hole—unilateral in a chronic alcoholic with T. B.

Secondary Optic Atrophy—One case—Counter coup rupture of retina—in vicinity of disc.

Pseudo Optic Neuritis—One case—Acute mastoiditis left side and a contra lateral pseudo neuritis—normal color and form fields and vision.

Palpalbral Abscess—Secondary to measles. One case—Lad of eight years—Entire right and left lower lids and bridge of nose—cellular abscess—multiple—directly following measles.

In addition about ten cases of ocular surgery were shown—including ocular plastics, intra ocular operations and injuries.

GEO. F. SUKER

OTITIC THROMBOPHLEBITIS OF THE SIGMOID SINUS, WITH REPORT OF AN INTERESTING CASE*

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THROMBOPHLEBITIS of the cerebral venous sinuses occurs more or less frequently and is invariably the result of middle ear suppuration by continuity of process, though occasional cases are considered the result of metastasis.

Otitic thrombophlebitis, or sinus thrombosis, is clinically one of the most important affections among the intracranial diseases occurring in the course of suppuration of the middle ear, happening more frequently in the acute than in the chronic form.

The proximity of the sigmoid sinus to the source of infection results in it being the one most frequently involved. The inflammation spreading from the region of the ear to the sinus sets up an inflammatory infiltration of the external connective tissue layers, causing a periphlebitis, which leads to inflammation of the sinus wall and finally to destruction of the endothelium and thrombosis of the sinus.

The thrombus is rather adherent to the inflamed wall of the sinus; it may be flat and grooved, allowing the sinus to remain permeable, forming what is known as a partial or parietal thrombus. Another form, depending upon its shape, completely fills the cross section of the sinus, either at one point or along its entire length, and is called an obdurating or occluding thrombus; of the latter, one type is fusiform in shape, and with its attenuated ends is obstructive in its medial portion, while another has blunt ends that fill the lumen of the sinus and blocks it the full length of the thrombus.

The color of a fresh thrombus is a deep red; of an older one—a grayish red, and of the suppurative one, a greenish yellow.

The thickened external wall of the sinus is grayish red in color and is resistantly elastic to the touch.

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In presenting the following interesting case a number of the salient features of this disease will be emphasized.

Case.—May 28, 1920. L. H., female, age 4 years. Referred by Dr. Wm. McKenzie of Philadelphia. Since beginning eruption of the deciduous teeth, the patient has been subject to frequent severe attacks of pain, the source of which, the mother has always thought was in the ears. At the age of one year and continuing to the present time there has been an intermittent discharge from both ears, at first preceded by pain, but now without pain for some time, while the discharge is growing worse, and for about one month the mother has noticed defective hearing. The patient had trouble in erupting her teeth, is subject to colds in the head and attacks of laryngisms stridulous, the latter being followed for some days by wheezing. Had a rash five months ago (probably measles). To date, all treatment of the ears has been without effect.

EXAMINATION

Otoscopic findings, right ear—The drum membrane is retracted, gray, and covered with a grayish yellow paste-like exudate. There is a large round perforation filled with red granulations in the anterior inferior quadrant, and a second perforation in the posterior superior quadrant under the superior fold.

Left ear—The upper half of the drum membrane is retracted, gray, and covered with a grayish yellow paste-like exudate. There are three perforations—one in the posterior superior quadrant under the superior fold, and two small ones in the anterior inferior quadrant. The discharge from both ears has an offensive odor.

Nose—All tissues in the nose are turgescient. The septum is deviated to the right. The right inferior turbinate is hyperplastic, blocking up this side of the nose. The left side is free and through it can be seen adenoids in the post nasal space.

Mouth—The teeth are good. The arch of the hard palate is moderately high. The tonsils are submerged, small; contain large crypts, some of which contain deposits of caseous material.

June 1, 1920. The adenoids and tonsils were removed. This, together with the treatment to the ears during the next five months, resulted in improvement of the hearing and decreased activity of

the middle ear conditions. On different occasions during this period, pearl-gray colored flakes appeared in the water used to wash out the ears, suggestive of cholesteatoma, but the microscope did not show the presence of cholesteatoma crystals.

November 2, 1920. A radical mastoid operation was done on the right side, with the intention of doing a similar operation on the left side a week later, but, though the patient was in excellent condition physically, the parents decided to postpone the second operation for several months, if possible.

Twenty-five days later (November 27, 1920) though there were no evidences of an acute condition in either ear when treated, on her way home from the office, the child had a chill, followed in the evening by a rise in temperature to 103.2 deg. Fahrenheit by mouth, but with no complaint of pain anywhere.

The next day when I saw her, the temperature was the same and the pulse rapid. There was slight swelling and tenderness under the tip of the left mastoid process and a profuse muco-purulent discharge from the ear; after removing the pus, pulsating light reflexes were observed at the locations of the old perforations in the drum membrane, the latter being a little more red than normal. A radical mastoid operation was suggested.

November 29, 1920, third day. - The temperature was 102.2 and the pulse less rapid. There was slight redness, thickening, tightening and tenderness of the skin over the mastoid process, with a little swelling and tenderness under the tip. A muco-purulent secretion was pouring from the external auditory canal and the drum membrane was mildly red and swollen.

November 30, 1920, fourth day. The temperature had dropped from 101.2 the evening before to 100.2 this morning. The patient was brighter and stronger. There was less pus coming from the ear and all mastoid symptoms were a trifle less marked, indicating that there was probably some control of the condition by the treatment. Nevertheless, I still advised operation, which the parents determined to postpone a while longer.

December 1, 1920, fifth day. The temperature reached 102 axillary at 4 P. M. of the fourth day and dropped to 99.1 axillary at 1.30 this morning. The body was moist with perspiration during the night; the patient was lively, though there was anorexia and

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her color rather bad. There was considerable thick creamy pus coming from the tympanic cavity, and all the mastoid symptoms remained about the same. The dressings on the right mastoid were wet from an increase of the discharge (to which there was some odor) from that region. I now insisted the patient was growing steadily worse and operation could not longer be deferred without grave danger, and the patient was sent to the hospital.

December 2, 1920, sixth day. The examination and observations just before the operation showed the temperature and pulse to have become normal and the patient looked a little better. The small red area over the left mastoid process remained, as did the discharge of pus from the ear, behind which there was a red and swollen drum membrane with pulsating light reflexes.

OPERATION

Radical Mastoid. After making the initial incision and elevating the muscular and other soft coverings of the mastoid process, the external cortical plate of the process was noted to be solid, but slightly redder than normal; upon chiseling through this wall, pus welled up under pressure. The entire plate was removed to the tip of the process, which was a cellular one. The cells surrounding the mastoid antrum and the anterior ones toward the tip contained pus and granulations, while most all of the others contained granulations or red swollen lining membrane. All granulations, necrotic bone, cells, etc., were thoroughly removed. The sigmoid sinus was exposed and presented granulations (perisinus abscess). In view of the favorable prognosis ordinarily in this condition, I deemed it advisable to let it alone. The granulations were removed from the tympanic cavity, as were the malleus, incus and the drum membrane; the eustachian tube was curetted and the operation completed with a Panse plastic operation. The wound was packed with iodoform gauze; a plain gauze drain was used in the ear with the usual sterile plain gauze and bandage covering the mastoid wound and ear.

One hour after the operation the temperature was 99.2 pulse 138, and respiration 28. During the night the temperature went up to 100.1, pulse 138, and respirations 26 (all temperatures taken per rectum).

December 3, 1920, first day after the operation. The temperature, pulse and respiration range during the 24 hours: 8 A. M., 101.4-138-28. 12 o'clock noon, 101.4-138-28. 6 P. M., 101.3-132-28. 9 P. M., 101.3-132-28. The patient took nourishment, slept in naps, cried, was fretful, nervous and restless, the skin being hot and dry. On account of the character of the temperature, the dressings were removed from both sides for inspection of the wounds. The left one was found dry and free of pus and the right one was in good condition; a saline enema was given and Belladonna prescribed. Streptococci were found in the pus taken from the left mastoid at the time of the operation.

December 4, 1920, second day. The temperature, pulse and respiration readings for the twenty-four hours are: 6 A. M., 101.4/5-138-31. 9 A. M., 101.1-138-28. 12 M., 100.2-138-28. 3 P. M., 100.2-138-28. 6 P. M., 100.3-138-28. 9 P. M., 100-136-28. The patient was restless, slept in naps and took diet of milk and orange juice. Voided urine twice—seven and eight ounces. Redressed the right mastoid and inspected the wound of the left one, finding the dressings dry. Rectal injections every two hours of two ounces of 5 per cent. solution of sodium bicarbonate were ordered.

December 5, 1920, third day. Temperature, pulse and respiration range: 6 A. M., 103.1-148-28. 9 A. M., 102.4-140-28. 1 P. M., 105-140-28. 4 P. M., 101.1-142-26. 9 P. M., 105-152-28. The patient voided fifteen ounces of urine, slept in naps, was restless, fretful, cried a great deal, and the skin of the face had a subicteric appearance. Redressing showed the right mastoid in good condition. The left mastoid wound was dry and the tissues rather pale in appearance. In his study of the patient's condition since the day following the operation on the left mastoid, the writer felt there was surely an existing intracranial complication, the symptoms and signs of which were strongly indicative of thrombophlebitis, the findings on this date tending to further verify such a conclusion; however, with a possible accompanying acidosis still in mind, intermittent enteroclysis of a five per cent. solution of sodium bicarbonate, two hours on and two hours off, was given, with Belladonna 3x internally, and observations extended.

December 6, 1920, fourth day. Temperature, pulse and respiration range: 6 A. M., 102.4-132-26. 9 A. M., 101.3-138-28.

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Noon, 101.2-130-26. 6 P. M., 101.1-130-26. 9 P. M., 100.3-138-28. 12 P. M., 101-120-26. The patient slept well during the night and voided fifteen ounces of urine. Belladonna 3x and Echinacea Tincture were given in alternation. Redressing showed the right mastoid wound in good condition and the left one was dry, but the tissues pale.

December 7, 1920, fifth day. Temperature, pulse and respiration range: 6 A. M., 106-172-30. 8.30 A. M., 103.2-132-26. 12 o'clock noon, 104.4-140-30. 3 P. M., 104.1-132-28. The patient slept part of the night but was very restless, when awake. Took diet (milk) and voided urine three times during the night and day—eight, ten and five ounces, the bowels being emptied by saline enemas as had been done during the past five days.

At this point I decided that an operation for the removal of a thrombus from the sigmoid sinus was imperative, and asked Doctor G. W. Mackenzie to confirm the diagnosis. The patient was etherized by Dr. C. V. B. Vedder, and after the necessary preparations, the operation was started, the first step being ligation of the internal jugular vein. An incision was made on the left side of the neck three inches long, near the anterior border of the sterno-cleido-mastoid muscle, on a line corresponding to the tip of the mastoid process and the inter-clavicular notch and about midway between these two points, continuing by blunt dissection through the sterno-cleido-mastoid muscle and the sheath of the internal jugular vein which lies to the outer side of the common carotid artery and in front of the pneumogastric nerve, all enclosed in one common sheath. When the vein was isolated, it was ligated below and above; the common facial vein was ligated and the jugular vein severed between the two ligatures; the long ends of the upper ligature were anchored to the skin at the edge of the incision; the wound was partially closed with sutures, and an iodoform gauze drain inserted in the wound to maintain an "Alexander skin fissure." We now removed all bone from over the lateral wall of the sigmoid sinus, which was grayish-red in color, had a hard fibrous appearance, and was hard to the touch. I made an incision through the full length of the lateral wall of the sinus without bleeding, and Doctor Mackenzie by blunt dissection extracted an obdurating thrombus one and one-half m.m. in length, blunt at both ends, and

adherent to the walls of the sinus. The thrombus and the inside wall of the sinus were grayish-red in color. Delivery of the thrombus was followed by a gush of blood from the upper end of sinus, which was readily controlled by a snug pack of iodoform gauze. Two sutures were placed in the upper end of the mastoid incision, a plain gauze drain was placed in the ear, and the wounds of the mastoid region and neck covered with plain sterile gauze and a bandage. Urotropin, three grains every three hours, was given. (Cultures of the thrombus gave no growth; hence it must have been sterile.) At 8.30 P. M., three hours after the operation, the temperature, pulse, and respiration range was: 99.2-138-28, and at 10 P. M., 101.2-132-32.

December 8, 1920, first day after the operation for ligation of the left internal jugular vein and removing a thrombus from the left sigmoid sinus, the temperature, pulse, and respiration range was: 12 o'clock midnight, 101.2-136-26. 3 A. M., 100.4-120-26. 6 A. M., 100-118-24. 9 A. M., 100.3-140-30. 12 noon, 99.3-138-28. 3 P. M., 104.2-140-34. 5 P. M., 104.1-140-36. 7 P. M., 106-142-42. 11 P. M., 103-138-44. 2 A. M., 103-138-38. 5.30 A. M., 105.1-140-40. The patient was very restless during the night until 5 A. M., when she slept one hour and her condition seemed to be improved, though she became restless during the day, drank water frequently in small amounts and voided urine in bed. Continuous enteroclysis with saline solution was applied and Arsenicum Album, M. potency, in water, was given hourly by mouth in dram doses, and the Urotropin discontinued. The left mastoid wound when redressed was dry and clean. After removing the iodoform gauze pack, I opened the upper end of the sinus, allowing a little blood, very dark in color, to escape, as a test against a possible existing piece of thrombus or pus above the opening, the wound being repacked with iodoform gauze. A lumbar puncture was made, withdrawing 7 c.c. of cerebrospinal fluid, that was cloudy and contained some flakes or coagula. The microscopical examination of the fluid showed a few diplococci, bacilli and micrococci.

December 9, 1920, second day after thrombus operation, the temperature, pulse, and respiration range was: 8 A. M., 104.4-140-38. 11 A. M., 103.4-140-38. 2.15 P. M., 103.3-144-38. 5 P. M., 102.3-140-38. 8 P. M., 102.3-126-36. 10 P. M., 100.1-120-26,

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12 o'clock midnight, 100-120-26. There was restlessness, and the child slept in short naps during the night. Through the day a fair amount of diet was taken. No bowel movement; the patient would not use the bed-pan and voided urine in bed. A high saline enema was expelled, as given. An ice bag was placed on the head. Though there was some cyanosis of the face and the pulse rather weak in the morning, by afternoon she talked freely and rationally and appeared bright.

Reflexes. Eyes—bright; pupils equal, normal in size, and reacted sluggishly to light and accommodation. The superficial reflexes were practically nil.

The knee jerks, both sides, exaggerated, and the Babinski negative. 7 c.c. of blood was taken from a vein in the right arm for a bacteriological examination. The blood was sown on glucose agar and lactose bouillon, and incubated at 37.5 c. for 72 hours. No growth was observed on any of the cultures at the expiration of that time.

On redressing the left side, the wound looked less pale, dry, and the blood from the sinus less dark than on the previous day. On the right side, the wound was doing nicely.

Phylocogen, Parke-Davis No. 1 "Mixed Infection," five drops, was injected into the left arm.

December 10, 1922, third day after the thrombus operation. Temperature, pulse, and respiration range was: 3 A. M., 101.3-130-32. 6 A. M., 102.4-128-34. 9 A. M., 103-120-34. 12 noon, 102.3-128-30. 3.30 P. M., 101.2-128-28: The patient slept good during the night, very little restlessness; a large amount of urine was voided while asleep; during the day she asked for food, and seemed in a much improved condition.

Redressed at 6 P. M.; the left side wound looked better, and the blood from the sinus was a brighter red color. Right side doing nicely. Reflexes, the same.

A second injection of Phylocogen, 7 drops, into the right arm was given.

December 11, 1920, fourth day after operation. Temperature, pulse, and respiration range was: 8 A. M., 100-86-32. 11 A. M., 99.4-102-30. 2 P. M., 99.4-100-28. 5 P. M., 102-106-30. 6.30 P. M., 102-118-26. 9 P. M., 103.1-114-34 12 o'clock midnight,

103.4-120-32. 6 A. M., 101.1-118-30. The patient was very restless during the night, the pulse weaker and slower, but stronger again during the day. Urine was voided in bed. A high saline enema was expelled with a small formed stool. Intermittent enteroclysis was applied. Redressed at 5 P. M. The left wound was clean, but pale; right wound dry, and the neck wound remained perfectly dry and clean.

December 12, 1920, fifth day after operation. Temperature, pulse, and respiration range: 9 A. M., 101.1-108-30. 12 o'clock noon, 100.1-106-30. 3 P. M., 100.1-100-32. 6 P. M., 101.1-118-28. 11 P. M., 102.1-100-30. 4 A. M., 101.1-120-30. The patient had a bad night, very restless, crying the greater part of the night and complained of pain in her head. Restless during the day, taking a little diet, and voiding urine in bed. Redressed; the left mastoid wound was dry, but upon withdrawing the gauze from the lower opening of the sinus, six or seven drops of pus welled up into the field. This was cleaned away and the sinus again packed with iodoform gauze. Right wound dry. Reflexes, the same.

A third injection of phylocogen, seven drops, into the left arm was given.

December 13, 1920, sixth day after operation. Temperature, pulse, and respiration range: 7 A. M., 100.4-110-28. 9 A. M., 100.4-98-30. Noon, 99.3-100-30. 4 P. M., 99.2-86-30. 7 P. M., 101.2-114-30. 11 P. M., 100.4-100-32. The patient slept quite good most of the night, but seemed much weaker in the morning. The pulse was weak and intermittent and the patient seemed to be in a stupor. Restless and her condition apparently much improved later in the day. The skin was dry, and she voided a large amount of urine in bed. The knee was slightly swollen, shiny, hot and tender to the touch (no redness) and held in a flexed position, an effort to extend it apparently causing great pain.

Redressed. The left mastoid wound showed some signs of beginning granulation, and there was a few drops of pus in the lower end of the sinus. The gauze was removed from the neck wound for the first time, "the wound being dry and clean"; and a fresh iodoform gauze drain was inserted. The right mastoid, though inactive as to healing, is no worse.

A second lumbar puncture was made, withdrawing 8 c. c. of

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cerebrospinal fluid. This was cloudy and showed a tinge of blood, but no flakes. The specimen was sent to the Laboratory for a Wassermann test.

A fourth injection of Phylacogen, 7 drops, into the right arm was given, an ice bag was placed over the left knee and Tuberculinum, M. potency, prescribed by the resident physician, Dr. Van Norden.

December 14, 1920, seventh day after operation. Temperature, pulse, and respiration range: 5 A. M., 100-98-30. 8 A. M., 99.3-80-28. 11 A. M., 99.4-102-28. 2 P. M., 100.2-120-26. 4 P. M., 100.2-114-28. 7 P. M., 101-114-26. The patient had a fairly good night. The pulse was slow and intermittent, and became stronger during the day. She took diet, voided urine in bed, and the bowels were cared for by saline enema. The left knee was wrapped in a cold, wet Turkish towel, covered with a dry one and a woolen blanket, this procedure being repeated subsequently at intervals as needed. The mastoid wounds were redressed.

December 15, 1920, eighth day after operation. Temperature, pulse, and respiration range: 7 A. M., 99-86-24. 10 A. M., 99.4-110-26. 1 P. M., 99.1-108-26. 4 P. M., 101-114-26. 7 P. M., 101.2-118-28. 12 o'clock midnight, 100.1-94-24. The patient slept the entire night, talked and played during the day, and was able to straighten out the left leg herself.

Redressed. The left mastoid was dry, free of pus, and presented a more healthy appearance. The neck wound and gauze drain was wet with a thin pus. The right mastoid wound was exceptionally dry. The left knee was cool to the touch and showed a small puffed area, the size of a quarter, just below the inner half of the patella. There was much better passive extension and much less pain and resistance to active extension of the leg.

Reflexes; Eyes normal. Superficial practically negative. Patellor, right leg less marked and Babinski negative.

A fifth injection of Phylacogen, 10 drops, into the left arm was given.

The report by Dr. St. John, on the test of the cerebrospinal fluid was: a negative Wassermann.

December 15, 1920, eighth day after operation. Temperature, pulse, and respiration range: 8 A. M., 100-98-26. 11 A. M., 99-

102-28. 2 P. M., 99-100-28. 5 P. M., 99.3-110-28. 9 P. M., 100.3-106-28. The patient slept most of the night, and during the day talked, played, slept, took diet and voided urine in bed. The left leg could be almost fully extended and was nearly normal in appearance. The patient was put on soft diet.

Redressed. The left mastoid wound showed good healthy granulations, and a small quantity of pus in the lower end of the sinus. The sutures were removed from the upper part of the incision. The neck wound was dry and the granulations looked healthy. The sutures were removed, the anchor ligature holding the upper stump of the internal jugular vein toward the skin surface of the wound was cut, the stump or end slipping deeper into the neck, a fresh iodoform gauze was inserted into the wound, and the outer dressings applied.

December 17, 1920, tenth day after operation. Temperature, pulse, and respiration range: 8 A. M., 99-100-24. 11 A. M., 98.4-110-24. 2 P. M., 99.1-116-28. 5 P. M., 101.4-118-26. 7 P. M., 100.1-118-30. 10 P. M., 100.1-118-30. The patient slept the entire night. Her condition was good, took food, voided urine in bed, and the bowels were moved by a high saline enema, because she refused to use the bed-pan. There was a slight swelling on the left knee over the aspect of the inner condyle of the femur and the wet packs were again applied.

Redressed. The left mastoid wound was dry and free of pus and granulating. The right wound had some odor, but was not in a bad condition, and the neck wound was dry.

December 18, 1920, eleventh day after operation. Temperature, pulse, and respiration range: 8 A. M., 100.2-100-28. 11 A. M., 99-100-26. 3.30 P. M., 100-110-28. 6.30 P. M., 100.3-120-28. The patient slept all night. Took diet during the day and voided urine in bed. No bowel movement. The left knee was again almost normal in appearance.

Redressed. All wounds are progressing favorably, and all the reflexes are normal.

December 19, 1920, twelfth day after operation. Temperature, pulse, and respiration range: 7 A. M., 103.2-118-32. 10 A. M., 102.4-116-32. 11 A. M., 104.2-124-30. 2 P. M., 104.2-130-34. 5 P. M., 104.1-112-26. 11 P. M., 102.1-100-28. The

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patient was restless from midnight until 3 A. M. During the day the skin was hot and dry, and the pulse of good quality. The patient took food, passed a large, hard, dry stool and voided urine in bed. There was a red area, the size of a silver half dollar on the right knee and pain in the left knee. Redressing was not done for experimental reasons.

December 20, 1920, thirteenth day after operation. Temperature, pulse, and respiration range: 3 A. M., 102-112-28. 8 A. M., 102.4-132-32. 11 A. M., 100.4-120-28. 2 P. M., 102-130-30. 6 P. M., 102.2-120-30. 9 P. M., 99.2-100-28. The patient slept the greater part of the night, and at times during the day sat up in bed. She used the bed-pan for the first time, and advantage was taken of the first opportunity to get a specimen of urine for examination. There was a slight swelling of the left knee over the inner condyle of the femur on which an ice bag was placed. Patient looked out the window, talked, was in good spirits and took a fair amount of food; was bright, and in the best condition since the first operation, December 2, 1920. Reflexes normal.

Redressed. Removal of the gauze from the neck wound was followed by the welling up of about a half dram of thick yellow pus. The wound was washed out with a potassium permanganate solution and a fresh iodoform gauze drain inserted. The left mastoid wound was dry and granulating beautifully. There was some odor and a slight thin exudate from the right one.

December 21, 1920, fourteenth day after operation. Temperature, pulse, and respiration range: 7 A. M., 100.4-110-26. 10 A. M., 99.4-110-26. 1 P. M., 100-130-26. 4 P. M., 101.4-130-30. 7.45 P. M., 104-140-34. 10 P. M., 104.3-140-32. The patient did not sleep well after midnight. During the day the body was very hot and dry. She took a satisfactory amount of diet, voided urine, and had a large soft stool, as a result of a high saline enema. Both knees were apparently normal.

Redressed. The neck wound was dry and clean, and both mastoid wounds were in good condition.

The report of the urine analysis is as follows: Reaction, acid. Specific Gravity 1015. Inducane, very high. Sugar, none. Casts, none. Crystals, none. Cellular elements: large squamous epithelial

cells, a few. Deep tissue cells, a few from lower tract, and pus, in a small amount.

December 22, 1920, fifteenth day after operation. Temperature, pulse, and respiration range: 2.30 A. M., 104.3-120-30. 7 A. M., 101-120-28. 10 A. M., 99.1-120-28. 2 P. M., 100.1-140-30. 5 P. M., 103.4-120-30. 10 P. M., 102.2-128-30. The patient was very restless during the night; slept for short periods, waking up thirsty and taking water in small amounts; the skin being very hot and dry. After 4 A. M. she slept for one hour naps and was more quiet. During the day she was improved, sitting up and playing in bed. Voided urine and took food. Looked well, talked a great deal, and was interested in everything. Both knees appeared normal. All reflexes were normal.

Redressed. All wounds progressing satisfactorily.

The laboratory report on a specimen of pus taken from the right ear for examination is as follows: Tubercle bacilli not found. *Bacillus Pyocyannus* in pure growth on cultures.

December 23, 1920, sixteenth day after operation. Temperature, pulse, and respiration range: 8 A. M., 97.4-118-30. 11 A. M., 97.4-120-28. 2 P. M., 98.4-120-28. 4.30 P. M., 98.4-120-28. 9 P. M., 98.2-120-28. The patient had a good night; slept practically the entire time. Her condition was good, sitting up in bed playing, taking food, voided urine, and had a large formed stool, following a saline enema.

Redressing. A slight trace of pus was seen at the upper end of the operated sigmoid sinus on the left side. All other wound conditions were good.

December 24, 1920, seventeenth day after operation. Temperature, pulse, and respiration range: 6 A. M., 98.3-118-24. 9 A. M., 98-118-24. 12 o'clock noon, 98.4-118-24. 3 P. M., 99.2-118-24. 9 P. M., 99.2-120-24, (temperature taken per rectum). The patient slept all night, was cheerful, and in good condition, as were all the wounds.

December 25, 1920, eighteenth day after operation. Temperature, pulse, and respiration range: 6 A. M., 98.2-116-24. 12 o'clock noon, 98.4-118-24. 3 P. M., 99-120-24. 9 P. M., 99.2-118-24. The patient slept well, ate her food, voided urine, and had a large formed bowel movement. Not redressed.

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December 26, 1920, nineteenth day after operation. Temperature, pulse, and respiration range: 9 A. M., 98-110-24. 4 P. M., 98.3-118-24. 9 P. M., 98.4-120-24. The patient slept all night. Her condition was good and the wounds were redressed by the house physician, Dr. Becker.

December 27, 1920, twentieth day after operation. Temperature, pulse, and respiration range: 9 A. M., 99-118-24. 5 P. M., 99.1-120-24. The patient slept all night, was comfortable and the bowels were moved by a soap and water enema.

Redressed. The first time in three days, and the condition of all wounds is entirely satisfactory.

December 28, 1920, twenty-first day after operation. Temperature, pulse, and respiration range: 9 A. M., 99-120-24. 2 P. M., 103.1-130-30. 4 P. M., 103.4-132-30. 7 P. M., 105-160-32. 9 P. M., 104-160-32. The patient slept well during the night and during part of the forenoon and felt good. She walked about her room in the hospital, into the hall and to the toilet; looked good and was bright. About noon she had a chill, which was followed closely by a rapid rise of temperature. There was a red spot on the right cheek; her body was hot and dry, and the hands and feet cold. No other symptoms. A high saline enema retained five minutes was expelled with a large amount of soft formed stool. Belladonna 3x was prescribed. The mother felt confident the present condition was due to a gastro-intestinal disturbance caused by an English walnut the child had eaten, and insisted that the patient always has run a high temperature at the least provocation. Reflexes normal.

Redressed. Both mastoid wounds were in good condition and healing nicely, as was the wound in the neck.

December 29, 1920, twenty-second day after operation. Temperature, pulse, and respiration range: 6 A. M., 100.2-118-28. 9 A. M., 102-120-28. 12 o'clock noon, 102.4-130-30. 3 P. M., 103.3-148-36. 5 P. M., 104.2-148-36. 6 P. M., 102.2-140-30. The patient slept well during the night. There was a red spot on the left cheek. A drop in the temperature to 102.2 followed a sponge bath and an alcohol rub. A high saline enema retained 10 minutes was expelled with particles of undigested food including the English walnut kernels. The skin was hot and slightly moist. The

patient was nervous and unsteady, with some loss of appetite. Reflexes normal.

Redressed. All wounds found in a good, progressive and healthy condition.

December 30, 1920, twenty-third day after operation. Temperature, pulse, and respiration range: 6 A. M., 98.2-108-24. 9 A. M., 98.4-110-24. 12 o'clock noon, 99-110-24. 3 P. M., 99-130-26. The patient slept all night and was in good condition. Redressed.

December 31, 1920, twenty-fourth day after operation. Temperature, pulse, and respiration range: 9 A. M., 99.3-120-24. 12 o'clock noon, 99.3-114-26. 3 P. M., 100.3-130-28. The patient slept well during the night and day. The appetite improved, and her condition was good, a saline enema having been given with fair results.

Redressed. All the wounds were healing nicely and the patient was discharged from the hospital on this date. Convalescence has progressed steadily, even through an attack of whooping cough, until at the time of writing this report, there is entire recovery, with both ears healed.

A number of features that impressed the writer throughout the course of the disease are included in the following summary.

1st. The irregular and high temperature manifested a few days after the onset of the acute middle ear and mastoid conditions, was suggestive of an intracranial complication, preferably an affection of the venous sinuses.

2nd. Restlessness, a cardinal symptom of thrombophlebitis, was prominent and persistent from the sixth day of the onset of the disease and lasting for about fifteen days.

3rd. This being the first case of thrombophlebitis the writer had ever seen in a child so young, was responsible for his being rather over-cautious in establishing the diagnosis and operating, particularly because both mastoids were involved.

4th. This patient showed that at least some cases of the thrombophlebitis can go quite a little time without operation, though an early operation is undoubtedly preferable.

5th. There was presented a typical specimen of an occluding thrombus.

OTITIC THROMBOPHLEBITIS OF THE SIGMOID SINUS

6th. If the patient had been operated upon at the first signs of the acute mastoid involvement, the thrombophlebitis would probably have been aborted.

7th. Pachymeningitis externa is a frequent concomitant manifestation of thrombophlebitis, a localized form of which seemed to be illustrated in this case.

8th. The pus in the lower end of the sinus subsequent to the operation was probably the result of disintegration of some thrombotic tissue not removed or a slight necrotic process in the vessel near or possibly in the jugular bulb.

9th. The rapid rise of temperature and general disturbance in the patient at the presence of beginning metastasis and the prompt quieting down of all symptoms on controlling the metastatic process, presented a most interesting picture.

10th. This was a case with rather excessively high temperature tendencies, as seemed to have been demonstrated at different times throughout the course of the patient's illness, especially during the more or less moderate gastro-intestinal disturbance.

11th. The pulse maintained a rather exceptionally good quality for a patient so ill.

12th. At certain times in the course of the illness, tubercular tendencies seemed to be suggested but could not be verified by an examination of the pus or other laboratory findings.

DISCUSSION

DR. W. H. PHILLIPS, Cleveland, Ohio: *Mr. President and Members of the Society.* I heard Dr. Alexander's paper with a great deal of interest, and I think it is one that will fully repay any of us to read carefully. The details of it are very complete; and when we meet with a Sinus Thrombosis, which most of us do not meet with very often, we are always glad to refer back to some article in which a similar case has been treated, not superficially but in detail. I think that we should keep this case report at hand, where we can refer to it when needed.

This paper has left very little opportunity for real discussion. Dr. Alexander has covered the ground thoroughly, as you will see when you read the paper. He has given only a synopsis of it.

Some of us are inclined to have a very different view of some of the points, from our experience, or to adopt a little different measures at some point in the operative treatment. In the first case, the question arises in my mind, what was the real logical sense of doing a double radical operation. There have been no reports of the hearing tests in the case of this child, and we know that a radical usually results in permanent loss of hearing. If there was already a permanent loss of hearing or marked reduction of the hearing in both ears, then the decision was correct. Otherwise, there might be a question as to the advisability of doing a double radical on a child of this age.

The second point that occurred to me was the number of after infections that take place following a sinus thrombosis, when the clot is reported as being sterile. My judgment is that most of these cases are not strictly thrombosis of the lateral sinus, but are primarily a thrombosis of the jugular bulb. The doctor spoke of finding an aseptic clot half a millimeter in length. If you think what that is, you can understand what a small clot had formed in the lateral sinus. Most of these cases are thrombosis of the jugular bulb, and are infected. The clot is formed as the result of obstruction of the blood current itself. When the sinus is opened, we find a discharge of blood from the lower angle; this proves that the infection was in the bulb. This led to the second decision as to the treatment of the ^{*}jugular.

Several years ago, I read an interesting article by a Boston man whose name I do not recall, who recited twenty or thirty cases in which no resection of the jugular was done, but a simple ligation above the facial. It appealed to me that most of these cases were in the jugular bulb. We can realize that unless a clot has already formed from long neglect, the drainage will be from above, and not below; and if the jugular is shut off, allowing free drainage through the facial, we shall rarely have infection of the jugular above the facial. For ten years, I have not done a resection of the jugular. I have tied it below the facial and closed it completely, and have not had occasion to open it secondarily. If we already had a thrombosis of the jugular, such treatment would not be correct; but usually simple ligation is all that is ever necessary.

Going back to recurrent infections, which the doctor mentioned

as having occurred following jugular resection, it has been my way of doing; for I find that most of these are streptococci infections. Occasionally we find pneumococci; but, the majority being streptococci, I have invariably used an anti-streptococcic serum in these cases, and in that way have not found anything like what I found formerly of these postoperative infections, which often clear up with this treatment.

There is one other point that I should like to mention, and that is the reference that the doctor made to pachymeningitis. He found meningococci, diplococci and bacilli in the spinal fluid. When we find these in the spinal fluid, this has always been considered to mean a leptomeningitis; and it is questionable whether this was not a true infection, acquired simply during the withdrawing of the fluid, and that we merely had a serious meningitis to deal with.

DR. ALEXANDER, closing: Unfortunately, I forgot to include in my paper the statement that efforts had been made to make functional hearing tests, without success, because of the age of the child and its temperament. The mother reported that the child had defective hearing; but this was not so marked that, in my estimation, at least, it should have deterred us from operating on both ears, if necessary.

In the second place, I felt that this patient, having had these discharging ears, and with a pre-tuberculous tendency, ever since she was born, practically was, under the circumstances, in a danger greater than the loss of her hearing. This may prove to be almost true; because it is almost a miracle that she is living. She was a very sick child, and we worked very hard; but we were rewarded with the proper result.

In regard to the measurement of the clot, that was a mistake. I meant to say one centimeter, instead of one millimeter.

About the spinal fluid, of course I should not like to say that it was not infected during the process of withdrawing it; but I took very great pains, in both instances, to keep it absolutely sterile.

Dr. Phillips made a point about making the second mastoid operation, which I cannot think of just now. I am sorry; but there was a reason for all the operations.

ELECTROTHERAPEUTICS IN AURAL DISEASES*

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THE older literature is filled with descriptions of the value of electricity in the treatment of aural diseases, but since, in the large majority of cases, better results may be accomplished by easier methods, this means of therapy has been relegated to oblivion. If the technic is perfect, there are some auralpathies which will respond to electrical therapeutics more quickly and with better permanent results than by any other means. It is the object of this presentation to describe these conditions and to state a technic which will yield successful results.

In a general way, success depends upon attention to the apparatus. It is so important that it must be stated that electrical apparatus should be kept free from dust, moisture and grease. Binding posts and connecting ends of cords must be polished and spark gaps or contacts must be frequently cleaned and sandpapered smooth. It may seem irrelevant to mention these details, as the matter of cleanliness is usually left to the janitor, but many failures are due to their neglect.

Occasionally, it is well to have meters recalibrated by comparison with standardized ones and rheostats should be tested for dead points especially when they control galvanic currents. In the use of currents, as the galvanic, faradic or sinusoidal for muscular contraction, it is well to test upon your own muscles before applying them to the patient.

Galvanism or the low voltage continuous current has been recommended for almost every known disease of the ear. While its indiscriminate use is to be condemned, it is of value in testing the function of the eighth and seventh cranial nerves, and when properly employed, in dilating strictures of the eustachian tube.

In using continuous current, it is necessary to know the polarity of the leads. If the machine is connected to the main with a polarity

*Prepared at the request of Dr. Gilbert J. Palen, Philadelphia, to present the practical value of electrotherapeutics to the otologists.

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plug, the pole changing switch indicates the polarity of the currents, and it will not be necessary to test it every time before use, but this is a good habit to acquire and may prevent errors. The simplest test is made by placing both leads into a glass of water and turning on the current until bubbles of hydrogen gas are seen coming from the negative pole.

In the functional test of the eighth cranial nerve by galvanism, Mackenzie, a member of this society, claims priority in the original research work to perfecting a technic by which the polarity variations of nystagmus produced by the galvanic current may be of value in the differentiation of labyrinthine and intracranial pathology. Alexander and Neumann have also been credited with making investigations in this field of research. The technic for these tests are so fully described in the literature that only mention of it will be made in this article. The important points in making these tests are to develop a definite technic and then stick to it; also to be careful in noting the polarity of the electrodes; and be accurate in placing the electrodes, applying the active one in front of the tragus and the indifferent electrode either over the seventh cervical vertebra or have the patient hold it in the hand on the side being tested.

In testing the electrical reaction of the seventh cranial nerve, it is well to locate the points on the normal side by faradic contractions and mark them with blue pencil. After this, the corresponding points on the affected side may be tested. This nerve may be injured during mastoid operations or there may be a loss of function from pressure of the dressings after an operation, or it may be a coincident loss of function due to toxicosis from a focal infection.

A general prognosis of nerve regeneration may be established according to the rule formulated by Erb who states that when there is no change from the normal reaction, the prognosis is good. If the excitability is lessened to both galvanic and faradic irritation and the muscle contraction to the galvanic current is reversed (A. C. greater than K. C.) the prognosis is also good. However, when the reaction of degeneration is present, that is both faradic and galvanic excitability of the nerve is lost, and faradic excitability of the muscles diminished, and quantitative changes in galvanic

contractions are present, the prognosis is unfavorable, but recovery may occur in the majority of cases, if treatment is continued for many months. In no case should the therapy be abandoned before testing the contractibility of the muscles with the Lewis Jones condenser set. In profound cases of paralysis, at first it may be necessary to contract the muscles therapeutically with the condenser set, and follow later with sinusoidal or faradic currents.

In the treatment of Bell's palsy, the best results have been obtained by starting with diathermia at the end of the first week of the disease, giving treatment on alternate days. This is done by using electrodes of block tin, a pound to the square foot in thickness, which are so cut to fit the face and placed one on each side and held in position by a C clamp. To prevent burning, the electrodes and also the skin must be well moistened with soapy water. To prevent dizziness and headache from occurring after the therapy, the current is started slowly, taking five minutes to reach the maximum amount. In the early treatments, not more than five hundred milliamperes to each ten square inches of the surface of the electrodes is used and at subsequent treatments, not over one thousand milliamperes of current are passed through electrodes of this size. The maximum amount of current is maintained for five minutes and then gradually turned off taking one minute to reach zero. To restore the contractibility of the muscles, at the end of two weeks faradic or sinusoidal currents may be used. At first only a weak contraction is produced and about two or three of these to each muscle. The improvement in the function of the muscles is carefully observed and as one muscle regains equal tone with the corresponding one on the opposite side, the electrical exercise is discontinued. However, treatment is continued to the weaker muscles, so that all the paralyzed ones are restored to equal contractibility with the opposing group.

In the treatment of obstructions of the eustachian tube, galvanism when properly used, is of great value. If the obstruction is due to fibrous tissue and will not yield to the usual dilatation with the bougie or sound, the negative pole is selected as the active one. This is the pole of choice because of its liquefying and disintegrative action. It is also a vasomotor dilator and the cicatrix following destruction is soft and pliable. If on the other hand, the obstruction

is due to a hypertrophy of the mucous membrane or to organized exudates within the eustachian tube, the positive pole will be selected. Because of its hemostatic action and of its vasomotor constricting effect, it also causes contraction and hardening of the tissues. For the use of the two poles, the technic is different and will be described separately.

The active electrode is in the form of an olivary tipped bougie made of copper and with an insulated stem. The bougies are introduced through a hard rubber eustachian catheter. Silver catheters must never be used, even though the stem of the electrode is insulated, because during the softening of the strictured area, a serous discharge is formed which flows down the tube; when this comes in contact with the silver catheter, it converts it into an active electrode.

The hard rubber catheter is made the same shape and size as the Yankauer silver one or checked by it, so that the Yankauer scale may be used on the electrodes to indicate in which part of the eustachian tube the electrolysis is taking place. The copper olivary electrode may not pass beyond the isthmus, so that in cases where the obstruction is beyond this point, the flexible silver wire probes are used as electrodes. The whole procedure of electrolysis must be associated with that of sounding the eustachian canal and the same precautions are applicable to both procedures. Dilatation of the tube by sounding should be continued during the interval of the galvanic treatments. The electrolysis is used only in those cases where the method of sounding has not been successful.

For negative electrolysis, the catheter is introduced into the eustachian tube and the olivary bougie passed through it and into the tube until it meets an obstruction. Then the current is slowly turned on until three to five milliamperes are registered upon the meter. This milliamperage is maintained until the electrode can be moved forward. The current is then slowly turned off, and the electrode moved slightly backward and forward several times. If it again meets an obstruction, the current is slowly turned on, repeating the process of galvanic dilatation. These treatments should not be given oftener than twice in one week, and once a week is better.

For positive electrolysis, the electrode is introduced as de-

scribed under the negative technic. The current is gradually turned on until three to five milliamperes are registered. When it is noted that the electrode is adherent to the membrane, the current is gradually turned off, and the polarity switch reversed, so that a small amount of current from the negative pole is turned into the electrode, using just enough to free the attachment. The current is then slowly turned off and the polarity switch again reversed. The electrode is moved forward until it meets an obstruction and the dilatation is continued with the current from the positive pole. These seances should not be continued over a longer period than four to six minutes.

If the steps as described for electrolysis are carefully followed and the right pole selected for the pathological condition present, a successful dilatation is sure to be accomplished.

In the treatment of neoplasms of the pinna and the external canal, electrothermic coagulation offers the best results both from a cosmetic point of view in the removal of benign growths, and as a preventive of recurrences in the treatment of malignant growths. In the removal of small benign neoplasms, the monopolar method may be employed, using a local anaesthetic. A needle electrode is used and just enough current employed to dry the growth. The dried growth may be left to slough away, or curretted and the base lightly coagulated to sear any lymph spaces which may be opened by the curettage.

In the case of malignant growths, the bipolar application is preferred. One pole consists of a metal plate which is applied to the back in such a way as to be in constant contact with the skin. To prevent severe burns from occurring, this plate must be carefully placed upon the skin, and both the skin and the plate well moistened with soap and water. When it is necessary to remove the whole pinna, it is preferable that this be done under a general anaesthetic. The amputation can be completed in a few minutes by using a Percy blade. In malignant growths, this method has the advantage over the cutting operation because the lymph spaces and blood channels are seared while the amputation is being done and the heat generated in the tissues raises the temperature sufficiently to destroy the reproductive power of those cancer cells which have migrated beyond the principal growth.

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This current may also be used to divide fibrous strictures resulting from inflammatory processes when located in the external auditory canal. To do this, the monopolar method is preferred, using a fine needle as the electrode and introducing it through the stricture near the wall of the canal. The stricture is divided toward the lumen and there is no contraction of the scar following this procedure.

During the course of nonsuppurative otitis media or after the suppurative variety, when the exudate is of a plastic nature or becomes organized into fibrous tissues, ankylosis of the ossicles occurs, with diminution in the function of hearing. Improvement of the loss of function is to be expected by the use of electrical therapy.

There are three modalities which are of value in the absorption of plastic exudates and fibrous tissue and these are galvanism, high frequency currents and x-rays.

The ionization of sodium chloride into the tissues by galvanism is of value in reducing the contractions of scar tissue. There are objections to this method as applied to the tympanum but it may be used. Have the patient lay the head on the side, then fill the external meatus with a normal saline solution. Use the negative pole as the active electrode attached to a probe applicator which is inserted into the saline solution. The indifferent electrode is applied to the spine and between five and ten milliamperes of current are used for ten to twenty minutes. The probe may be covered with a soft rubber tube so that it will fit snugly in the meatus and prevent the metal from coming in contact with the integument.

The monopolar current from an ouidin or tesla coil used with a vacuum or non-vacuum glass electrode has been suggested as valuable in these conditions. Because of the ozone given off by the passing of the electric sparks through the air, oxidation and liquification of the exudate will occur when the tympanic membrane is ruptured, but the current is not of value when fibrous tissue has formed or when the drumhead is intact.

Bipolar application of d'Arsonval current has been extensively used to absorb plastic exudates and fibrous tissue from the synovial membrane and to a lesser extent from the pleura. The application of this current to the tympanum is difficult. The electrodes must be so placed that the current will pass in direct lines between them

and the tympanic cavity. An external electrode made in the shape of a circular disc about $\frac{3}{4}$ of an inch in diameter is placed over the mastoid at a point corresponding to that of the position of the antrum. The electrode and the skin surface are both well moistened with soapy water. The other electrode is in the form of an oval shaped disc about one inch long and one-half inch wide. After cocainization, this is placed on the lateral wall of the postnasal pharynx. This electrode must be well moistened in a soapy solution or dipped into glycerin. Not over twenty-five milliamperes of current are to be used and if the patient complains of burning, the current is to be stopped at once. Because of the cocainization, burning of the tissue may occur before the sensation is experienced so that this application must be carefully supervised to prevent serious injury.

The x-ray is the third method of value in absorbing plastic exudates and fibrous tissue. It has been extensively used in the pathology of the pleura and peritoneal cavity and to a lesser extent in the tympanic cavity. Results from the x-ray have been obtained in comparatively recent cases. Those cases which have gone on over a period of years and have no periods of improvement in function and in which the register of sound shows a loss of function at both ends of the scale, will not be benefited by the Roentgen ray.

The Roentgen ray has the advantage over high frequency and galvanic currents in the fact that it will cause absorption of inflammatory tissue in the postnasal pharynx, causing atrophy of hypertrophied areas. It will also cause atrophy of lymphoid tissue in Waldeyer's tonsillar ring at the same time as the tympanic cavity is being treated. This procedure also straightens and shortens the crypts in the tonsils, so that they can drain easier and cease to be harbors of infection.

The technic in the use of the Roentgen ray as a therapeutic agent for the tympanic cavity is a modification of that recommended by Witherbee in the treatment of the tonsils. The protecting lead foil has an opening three inches long and two wide and cut square at the top and semicircular at the bottom. There must be a number of protecting foils, each having an opening of different size so as to correspond to various sizes of the face. A size should be selected that will just expose the tympanic cavity and Waldeyer's

tonsillar ring to the rays, and protect the salivary and thyroid glands. The dose is that used in the treatment of the tonsils which is that of one-half of a skin dose every two weeks. There is no danger to other structures if this technic is accurately followed.

The integument lining the external auditory meatus may be affected by eczema occurring in a number of different varieties. The disease is not due directly to bacterial origin, but to change in metabolism; and this may result from an infectious or non-infectious etiology. It may result as a part of the general manifestation of the disease or follow a local irritation of the external canal.

The resistance of this disease to therapy suggests the use of the ultra violet rays which have proven so efficacious in the treatment of eczema in other parts of the integument.

Because ultra violet rays travel in straight lines, there is difficulty in producing sufficient effect upon the walls of the external auditory canal without damaging the tympanic membrane. The rays may be dispersed by projecting them into watery solutions containing certain chemicals, but watery solutions are particularly contraindicated in the presence of eczematous eruptions and are especially dangerous when the membrana tympani is ruptured. In the latter case, their use may be followed by an acute infection of a fulminating character, even extending to the mastoid cells or the cranial cavity, with all the dire results of such complications.

When the actinic rays are passed through a straight rod of fused quartz, the majority of them will leave the rod in parallel lines with the long axis, but there are some rays which diverge as they leave the rod and these divergent ones may be utilized upon the walls of the canal.

The membrana tympani is protected from the intense stream of actinic energy by fitting over it a small piece of chamois skin, cut oval in shape, to cover the drumhead and adjusted in place by an aural applicator.

To prevent the local destruction, which will occur from the rays diverging at the edge of the end of the quartz rod, a piece of black paper, such as comes between x-ray films, may be wrapped around the rod in the form of a cylinder and allowed to extend about $1/32$ of an inch beyond the end of the rod. The quarter-inch

rod and paper are clamped in the chuck which is fitted with a diaphragm to cut off the rays when they are not in use.

The dose is measured by wrapping a piece of special sensitized paper around the rod and extending beyond the end for about three-fourths of an inch. This is exposed for ten seconds and developed in the usual way and compared with the actinoquantimeter. The time for exposure is computed from the area of greatest intensity, which will be nearest to the end of the quartz rod.

Under the guidance of reflected light from the head mirror, the canal is prepared for the treatment by wiping away all discharge and scales. In chronic forms, it may be necessary to soften the scales with vaseline and remove them slowly by repeated applications for several days before the actinic ray therapy is started. In the adult, the pinna is drawn upward and backward so as to expose the entire length of the meatus. It is often advantageous to treat the canal in two steps. When this is done, the quartz rod is introduced half way into the canal and the integument covering the osseous portion is treated. It is then withdrawn, thus exposing the lining of the cartilaginous portion. If it is deemed advisable to give actinic radiation to the membrana tympani, this may be done after removing the chamois skin with a pair of aural forceps. The dose must be predetermined, for the direct rays are much greater in quantity than the divergent ones.

When using the air cooled lamp, the applicator cannot be introduced under direct vision; therefore the length of it, necessary to reach the desired location in the external meatus, must be predetermined. To prevent passing the correct depth, a flange may then be slipped over it.

In the acute forms of the disease, regenerative doses are given and repeated daily or on alternate days, while in the chronic manifestations, doses of desquamating intensity are required and repeated after the subsidence of the reaction.

When the aural invasion is a part of a general systemic disturbance and eczematous manifestations appear on other parts of the body, general actinic therapy is indicated and must be followed by radiant light and heat energy from a deep penetrating therapeutic lamp.

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ABSTRACTS .

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ABSTRACTS

X-RAY TREATMENT OF TONSILS WITH THE CONJOINT USE OF THE ULTRA VIOLET RAY.—By A. J. Pacini, M.D., *J. of Rad.*, April, 1922. Pacini states that in the treatment of tonsillar disease, surgical indications exist and should be utilized, but that there appears to be a class of cases in which the x-ray serves eminently well. This is true particularly of hypertrophied tonsils of childhood, and this article deals exclusively with this phase of tonsillar disease.

In childhood, the lymphatic system is dominantly active, and the tonsil being a part of this system, is naturally hyperactive. The author describes minutely the theory of immunization and concludes that the tonsils contribute to the establishment of immunity and are

inseparable from the defense usually recognized as natural immunity.

Upon this hypothesis of immunity, Pacini divides tonsillar conditions into three clinical types:

1.—Those in which the tonsils are hypertrophied but not excessively reddened, suggesting a minimum bacterial activity.

2.—Those in which reddening is present, suggesting bacterial activity but below the point of clinically established infection.

3.—Those markedly reddened with systemic evidence of infection.

In the first type, the tonsils are hypoactive, as the power of defense outweighs the power of attack to such a degree that subacute bacterial activity cannot be established to set up immunity. To remove these tonsils surgically, will remove an immunizing organ, but to reduce **them** in size by the x-ray, to a point where their surface may be affected by pathological organisms, will establish the normal protection to the child.

In the second type of tonsil, the systemic resistance of the child is below par and the tonsil surface has too great an immunizing capacity. Here the x-ray will reduce the increased capacity for bacterial activity in the tonsil, and the ultra violet ray may be used to cause an immediate germicidal action.

The third type of case is the hypertrophied tonsil which is infected. Here the exudate is not confined to the surface but pus may be pressed from the crypts. This tonsil has lost its immunization power and is a local source of infection and should be removed surgically.

The author concludes that since the active immunizing type of hypertrophy of the tonsil, is the one most frequently met in childhood its function of immunization should be retained by the combined use of Roentgen ray and ultra violet therapeutics.

W. C. BARKER

TREATMENT OF FOCAL INFECTION OF THE THROAT BY X-RAY AS COMPARED WITH SURGICAL REMOVAL OF TONSILS AND ADENOIDS.—By W. D. Witherbee, M.D., New York City, *J. of Rad.*,

ABSTRACTS

April, 1922. Witherbee states that the basis for the use of the Roentgen ray in the therapy of the tonsil, is dependent upon the histological structure. Since the hypertrophied tonsil consists largely of lymphoid cells, and the small tonsil, of fibrous tissue of the embryonic type, and these two types of cells are atrophied by a smaller amount of Roentgen ray than any other type of cells in the body, hence the rationale for this therapeutic procedure.

From the standpoint of relieving infection, this is not limited to the tonsil, because the lymphoid tissue in the lateral and posterior wall of the pharynx is also atrophied by the effects of the rays. This shrinking of the tissue relieves the distortion of the crypts throughout the entire mucous membrane, a condition which is not possible to produce by any known surgical procedure.

Of thirty-six cases in which the crypts of the tonsils were examined after Roentgen ray irradiations, for hemolytic streptococci and staphylococci, thirty-two gave sterile cultures. This corresponds with the results obtained in the treatment of acne vulgaris, carbuncle and the throats of diphtheria bacilli carriers.

Witherbee's technic is to have the patient lie face down upon the table, with the tube under the table, the position being the same as if the lower molars were being examined. Both sides of the neck are exposed at each treatment, and the average number of treatments is eight, given at two weeks intervals. The dosage is seven inch spark gap and five milliamperes of current given for four minutes through three mm. of aluminum at a target skin distance of ten inches.

If this technic is followed, there is no danger from burns and the results are permanent. When the proper protection is used, there is no danger to the pituitary, thyroid or parotid glands. It is the same procedure that has been used for years in the treatment of cervical adenitis.

The author reports a series of five hundred cases treated by this method, in two of which, a concealed abscess was revealed after the shrinkage. In both cases, the abscesses were walled off by fibrous tissue, and the rheumatic condition of which these patients complained, was relieved early in the course of the treatment. This method is especially indicated in the case of vocalists, haemophilia,

chorea, diabetes, chronic endocarditis and any case where operation is contraindicated.

W. C. BARKER

THE VALUE OF THE TUNING FORK TESTS IN GENERAL PRACTICE.—E. S. Hallinger, M.D., *The Hahnemannian Monthly*, Vol. LVII, No. 7, July, 1922. After calling attention to the fact that "it is the little things" that count in examining ear cases and that one must pay attention to details if accurate deductions are to be made, Dr. Hallinger concludes as follows: First, that a knowledge of the condition present should be understood before intelligent treatment can be undertaken. Second, the use of the tuning fork tests frequently reveals unsuspected conditions. Third, they are the control by which the progress of a case can be determined and upon which the prognosis can be based. Fourth, the development of a technique in making examinations can not but ultimately result in the acquirement of the ability to observe. Fifth, protection in the suits for malpractice. Sixth, the value of the Weber, Schwabach, Rinne paradox as an aid in the diagnosis of a mastoid antrum involvement.

W. G. S.

THE KOTTMANN REACTION FOR THYROID ACTIVITY.—Wm. F. Peterson, M.D., F. T. H'Doubler, M.D., S. A. Levinson, M.D., and J. E. Laibe, M.D., *Journal A. M. A.*, Vol. 78, No. 14, April 8, 1922. The theoretical premises of the reaction are based on previous work with serum in pregnancy, that certain physicochemical differences must exist in the serum in cases of thyroid dysfunction, and that the chief difference would exist in the state of dispersion of the serum colloids. Kottmann points out the fact that the administration of bromides to the patient as well as the addition of bromide to the serum will inhibit the reaction. Conclusions: In a study of 400 serums obtained from patients with thyroid dysfunction, as well as those ill with other diseases, and a large group of normal persons, the photochemical serum reaction devised by Kottmann yielded a close index of the thyroid activity. The test is

simple and should be of material aid in the clinical as well as the experimental investigation of thyroid problems.

W. G. S.

DISTURBANCES OF METABOLISM AND ITS RELATION TO CERTAIN DISORDERS OF THE RESPIRATORY TRACT: A PRELIMINARY REPORT.—Dr. Grant Selfridge, *The Laryngoscope*, April, 1922. The fact is emphasized that many diseases of the nose and throat have their origin in disturbed physio-chemistry of the body.

Disturbances in the chemical actions, reactions and interactions, on the part of the endocrines, will result in anomalies of growth metabolism. Disturbances of the vegetative nervous system with symptoms of vagatonia or sympatheticotonia may also occur.

The principal regulators of metabolism are the thyroid, the pituitary, the thymus, the gonads, and the adrenals.

The adrenals stand as the great body supporter in emergency conditions. Apparently they also manufacture chemical substances to neutralize chemical substances, gaining entrance from without. To this class belong foreign proteins (bacteria, pollens, animal hair).

The writer considers that many of the failures of surgery of the nose and throat have, as their foundation, disturbed endocrines, depending on faults of inheritance (parental).

In support of these views, studies of basal metabolism and blood sugar in a series of cases submitted were undertaken. These cases were studied under the following heads:

1. Asthma.
2. Hay-fever.
3. (Recurrent Infections); (Vasomotor Rhinitis); (Hyperplastic Ethmoiditis.)

After reviewing three cases in detail, Dr. Selfridge offers the following conclusions:

"The trail of life is a rocky one from birth to senescence, and in so far as physical and psychical conditions go, can frequently be made smoother by assisting, when evident, the disfunctioning endocrines.

ABSTRACTS

"Disturbed physiology precedes pathology, and our pediatricists can perhaps assist in the scheme of life by developing a plan for the recognition, especially in the female child, of important endocrine upsets of the slight types in early life, and which appear to be connected with abnormalities of body growth."

W. G. S.

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Editorial

GROUP PRACTICE OF MEDICINE

THE group idea has taken the medical profession, or at least certain members, by storm, so that we find in most large cities one or several aggregations of this sort. We hear on every side that this is the coming thing or the only way to protect one's self and occasionally that it is the only scientific method of practice. That it is a very modern method of diagnosis no one will deny, but that it is the only way to practice therapy is open to argument.

Gordan Wilson, of the University of Maryland School of Medicine, in the *Journal of the American Medical Association*, June 24th, 1922, writing upon this subject, concludes his article with a very appropriate expression, and we quote it verbatim: "I cannot help recalling a remark I laughed at some years ago, when a very shrewd countryman surprised me by saying that he preferred an elder physician to a younger and better trained man, and gave his reason that 'he knew his constitution.' If he had only said psychologic reaction, I would not have laughed."

Without question, the advances in the various specialties in medical diagnosis have been so expansive that the clinician in general medicine would be a marathon to keep abreast. The increasing knowledge offered by refinement of older methods and the introduction of new methods of precision are simply mystifying. And most of this has been along entirely diagnostic lines. How much advance in therapy? That will come—perhaps. Might it not be possible that in this group diagnosis that many unnecessary examinations would be made? Are these examinations always painless and without danger?

In the development of group practice it would, therefore, seem that we are approaching a most difficult problem fraught with many dangers and pitfalls. We must acknowledge the absolute necessity

of a master mind internist, a man of broad mental calibre, seasoned well in the grim school of experience, a man who understands psychological reaction and who can temper the over-enthusiasm of the various operative specialists. Never before in the history of medicine has the internist been confronted with more difficult situations. Is he measuring up to his opportunity? Surrounded by the experts in the various specialities he should be the helmsman of a very important craft.

Let it not be forgotten in the development of these groups that the various specialties are advancing so rapidly that we find developing within the individual specialty, ultra specialists. In no sphere is this better recognized than in the departments of ophthalmology, otology, rhinology and laryngology. The advances in these sub-divisions render it well nigh impossible for one man to be equally well versed in all departments of this specialty. The refractive side of eye work, including, as it must, that vast field of muscular anomalies, offers sufficient scope for one man's endeavors. Fundus work and associated perimetry, campimetry and associated neuro ophthalmology and medical ophthalmology is another division. In the otological field, the neuro otological investigations are in the developmental stage, and yet we believe they will offer quite valuable information in neurological diagnosis. The laryngological field has developed the broncoscopic and oesophogophic specialties. If this one field has developed so many specialties within itself consider the divisions as they have developed in internal medicine, general surgery, neurology, gynaecology and obstetrics. The groups then, that do not include such ultra specialists will become a body of men taking the place of the old time clinical internist, and will sift out the work for the ultra specialists. The group to be complete must include ultra specialists when it becomes a large body and one wherein the element of psychological reaction may be wanting. Only the results of years of experience in group practice will determine its practicability. This, if group practice is to give the patient the very best.

J. V. F. C.

PROPER USE OF SPECIAL EXAMINATIONS

IN a recent issue of this Journal there appeared a very valuable article entitled, "The Proper Use of Special Examinations." The article called attention to the mistake of using negative evi-

dence in making a diagnosis and the "passing of the buck" by the general practitioner to the consultant. The writer was in a position recently to appreciate both of these facts, and takes this opportunity to compliment the author of the paper on his stand.—L. E. H.

A NEW ASPECT TO NASAL SUCTION

IT is curious how long we have been "fooling along" with nasal suction ideas and apparatus, without getting down to a thorough analysis of the primary mechanical factors involved. Frankly, I believe most of us have been too discouraged with any results of nasal suction in sinus cases to bother much with it. No doubt, we have all tried it out, but few have stuck to it. We have applied negative pressure to the nose after shrinking the tissues down and have found that in the majority of cases nothing is drawn out of the sinuses.

Iglauer, in the *Annals of Otology, Rhinology and Laryngology*, March, 1922, has given a verbal demonstration of the physics of suction with a modification of technique that leads us to again hope for something from its use. He compares the accessory sinuses to glass flasks, some with their necks and orifices upright, some on their sides and one in particular (the frontal) with drainage pointing downward. With fluid in these flasks everything depends upon their position, as to the effect of suction. Where the orifice is above the level of the fluid (maxillary antrum) suction is obviously ineffective, yet tilting the flask will give the desired position—then with suction acting upon fluid present at the mouth of the flask a certain amount of fluid can be drawn out. But, all the fluid can not be evacuated at once, for a negative pressure or air rarification develops in the air above the fluid and this counteracts the positive suction.

Iglauer relieves this vacuum by releasing suction or applying compression to force air into the cell to take the place of the displaced fluid. He then repeats the suction. By this means he is able to completely evacuate pus in most cases. He has demonstrated these principles upon the cadaver by inserting an observation window into the external wall of the antrum and frontal, and has seen the air bubble back into the sinuses to relieve the vacuum after suction has been employed.

D. M.

METROPOLITAN HOSPITAL CLINIC

L. E. HETRICK, M.D., F.A.C.S.

New York, N. Y.

THE following case is presented for two reasons: First, because it demonstrates the fact that the tracts of the two divisions of the 8th nerve are distinct and separate—in reality, two nerves; and second, because it will enable me to bring briefly before you some of the methods of diagnosis in otological practice.

The history of the case is as follows: This man, who is 25 years of age, complains of noises in the left ear and variable hearing. He has been deaf in the right ear since childhood. Since he can remember he has heard nothing with his right ear. The cause of this deafness in the right ear he does not know. The deafness in the left ear began three years ago while in service in the Hungarian Army. While in this service a grenade exploded near his left ear, resulting in some deafness, so that he could not hear words passed to him from his neighbor at a distance of one yard. This led him to visit the infirmary, where some medicine was dropped in the ear. This produced pain, a sense of fullness in the head, and was followed by a discharge, which still continues in moderate amount.

There is no complaint of obstruction to breathing. He does not sleep with his mouth open. There is no "cold habit." There is occasional sharp pain in the right ear. The week prior to his admission to the clinic he had an attack of nausea and vomiting which he attributed to gastric irritation. The venereal history is negative. The Wassermann taken has been reported negative.

The functional tests are as follows: *Right ear*—With the three metre speaking tube in the right ear, and the noise machine in the left ear, loud shouts are not heard.

The low C, C/64, is not heard.

The high C, C/2048 is not heard.

The Weber is lateralized to the left ear.

The middle fork test: Air conduction negative.

METROPOLITAN HOSPITAL CLINIC

Bone conduction, while apparently one minute and fifteen seconds, was shown later to be cross conduction, so that the tests of the right ear were negative and there was total deafness shown.

Left ear—The conversational voice is heard with difficulty at 30 feet.

The whispered voice was heard at 10 feet.

The C/64 was not heard.

The C/2048 is heard.

Air conduction one minute and ten seconds.

Bone conduction, one minute and twenty seconds.

Rinne negative.

Schwabach short 18 seconds.

There is, therefore, a mixed type of deafness in this ear.

Static Labyrinth: In testing the static labyrinth we resorted only to the rotation tests which were as follows: Ten turns to the right with head erect developed a left horizontal nystagmus of 20 seconds.

Ten turns to the left, with head erect, developed a right horizontal nystagmus of 24 seconds.

After turning, head 90 degrees forward, falling to right and left normal.

Nose and throat examination shows a chronic tonsillitis, hypertrophic type, anterior pillars adherent, follicles infected and exude pus on pressure. Anterior deflection of the septum to the right and posteriorly to the left. Large spur or ridge on the right side of the septum. There is enlarged middle turbinate. Nasopharyngoscope shows adenoids.

Ears: Right ear—Marked retraction of the tympanum membrane, which is very thin. No movement of M. T. or ossicles by Siegle otoscope. Eustachian tube patent.

Left ear—Large perforation of M. T. which is thick and opaque.

Diagnosis: Right ear—Total loss of function of auditory branch.

Cause unknown. Normal vestibular branch.

Left ear—Otitis media suppuration chronic.

Recommendation: Submucous resection, middle turbinectomy, adenoidectomy, tonsillectomy. Follow with argyrol tamponade.

Dry cleansing of ear twice daily, followed with boracic acid, alcohol and water solution.

In testing the hearing for absolute deafness it is necessary to exclude the ear not being tested and to include the ear being tested, and the old idea of inserting the moistened finger in one ear or pushing the tragus into the canal does not absolutely obstruct the hearing of that ear. To absolutely include the ear being tested we must use the speaking tube, and the longer the tube the more accurate the test. It is our habit, as you see, to use the 3 metre speaking tube. This tube is so delicate that one can whisper in it so low that a third party standing within a yard of the operator cannot hear what is said, yet the patient being tested can hear, provided his hearing approximates the normal. The use of the whispered voice, however, in these cases is not a test and is mentioned here only to emphasize the delicacy of this method and the fact that by such a tube we are able to direct our voice to the ear being tested.

To exclude the ear not being tested it is essential that some sound, more or less high pitched, sharp and fairly loud, must be used. Several machines have been evolved with this idea in view. The one most commonly used, however, is the one we are using here, and which is known as the Barany Noise Machine. With this machine inserted in the ear to be excluded, and a speaking tube tip in the ear being tested, we now proceed to make our test, starting with the conversation voice. This you will see is not heard; I raise my voice to a loud shout, and the patient sits with a perfectly blank expression on his face, hearing nothing. Therefore, so far as the human voice is concerned our patient is totally deaf. We proceed then to the various fork tests. Bezold evolved what is known as the continuous tone series of forks; a very elaborate test by which tone islands of deafness may be isolated, much as the perimeter outlines a scotoma in the eye. These elaborate tests are not essential for ordinary diagnostic purposes, and it has been found that the diagnosis of the various kinds of deafness may be made quite accurately with three essential forks. It has been determined by repeated tests that in nerve deafness the upper tone limit is lowered, and in catarrhal deafness the lower tone limit is elevated, so for testing the lowering of the upper tone limit we use ordinarily the high C, known as the C/2048; and for testing the raising of the

lower tone limit we use the low C, or the C/64. It is therefore obvious that the middle tones are lost last in all forms of deafness, and for that reason a middle tone fork of a known vibrating time is used in making the quantitative tests.

By using the high C you will note that the patient before you hears it as long in his good ear as I do, but that he does not hear it at all in the affected ear. The same, you will see, occurs with the use of the low fork. The middle tone fork that I am using to-day is one of the new standardized forks recommended by Dr. Mackenzie. It is the first good fork that has ever been made in America and I believe will be adopted by Otologists here as a basis for all differential diagnostic tests.

There is a definite relationship in the normal ear between air and bone conduction. These relationships are changed definitely in the various types of deafness. Air conduction is, of course, shortened in all types of deafness; bone conduction is shortened in nerve deafness and lengthened in catarrhal deafness. I use the word "catarrhal" here to signify a lesion of the conducting apparatus. There are also cases of mixed deafness in which we have lesions both of the conducting apparatus and the perceiving apparatus, in which cases there will be present characteristics of both types of deafness varying, in each case, according to whether or not the nerve element is greater than the conducting element.

The Weber test is made by placing the vibrating tuning fork in the middle line on the vertex. Sound waves travel through the bones of the skull to both ears. In an uncomplicated case of nerve deafness this fork will be heard best in the better ear; in an uncomplicated case of conducting apparatus deafness this fork will be heard best in the poorer ear. Used alone this test has little or no value.

Schwabach determined that in nerve deafness or perceiving apparatus deafness, a vibrating tuning fork placed upon the mastoid was heard for a shorter time than in a normal ear and longer than the normal ear in catarrhal or obstructive deafness. Therefore, if our Weber is lateralized to the left ear and bone conduction is longer than normal on the left mastoid (Schwabach) our two tests dovetail and we begin to have an idea that our patient has obstructive deafness.

Rinné observed that in the normal ear, air conduction was longer than bone conduction, and that in the case of obstructive deafness, particularly advanced cases, bone conduction was longer than air conduction. He observed also that in uncomplicated cases of nerve deafness, air conduction was always longer than bone conduction. We have come to denominate this test as being positive when air conduction is longer than bone conduction, and as being negative when bone conduction is longer than air conduction.

With these preliminary remarks on the three principal fork tests let us proceed to test this patient. The vibrating fork is placed upon the vertex and the patient states quite positively that it is heard most distinctly in his left or better ear; he is so positive about this that even with the fork placed upon the right mastoid, it is still heard in the left ear. This is known as "cross conduction." Further questioning elicits the fact that it is not heard in the right ear at all, and when held before the ear, air conduction is also negative. We therefore have our Weber test lateralized to the good ear, no bone conduction, no air conduction in the right ear. These facts, taken into consideration with the voice test previously made, make our evidence quite conclusive for total deafness on the right side. In other words, a complete cessation of function in the cochlear branch of the right 8th nerve.

As our time is somewhat limited and this fact has been conclusively shown, I will omit the time test of this man's better ear for some future date, and proceed to demonstrate the presence of a functioning vestibular branch on the right side.

We are able, by irritating various portions of the static labyrinth, to produce certain definite movements of the eyeballs, known as nystagmus, and from which movements we are able to determine the activity of that portion of the labyrinth irritated. For instance, if we irritate the horizontal canals we produce a horizontal nystagmus; and if we irritate the vertical canals we produce a nystagmus in the plane of the canal irritated. In other words, a rotatory nystagmus.

Three methods of irritating the labyrinth are in vogue; the rotation test, made by rotating the patient in a chair constructed for this purpose; the caloric test, made by irrigating the ear being tested, with cold water; and the galvanic test. Having no galvanic ma-

chine present, it cannot be demonstrated. The caloric test will be omitted, as the rotating chair will demonstrate for all practical purposes the function of this man's labyrinth.

The turning chair is a bi-lateral test, but experiments have shown that the major portion of the after-turning nystagmus comes from the ear in which the after-turning flow of endolymph is toward the ampulated extremity of the canal irritated. Thus, if we turn the patient to the right, with the head erect, and stop him, we have an after-turning flow of endolymph in the right ear away from the ampulated extremity of the horizontal canal and toward the ampulated extremity in the left ear; the major portion of the reaction, therefore, coming from the left ear. The proportion of this after-turning nystagmus in the two ears is about two from the left ear, to one from the right ear. Therefore when turning the patient to the right we are actually getting most of our re-action from the left ear, and when turning our patient to the left we are getting most of our reaction from the right ear. If, therefore, we turn this patient ten times to the right and then ten times to the left and get an equal amount of after-turning nystagmus from each side, we can assume that both labyrinths are functioning equally. Early observers of nystagmus thought that the quick component was the principal portion of the re-action; as a matter of fact we know today that the slow component is the principal element; but rather than confuse the literature on the subject we continue to name our nystagmus from the quick component, always remembering that the slow component is the vestibular element.

In observing a nystagmus do not watch the cornea but rather elevate the patient's upper lid and observe the small vessels toward the equator.

Let us now turn our patient, and after turning him ten times—which has been adopted as sufficient irritation to produce a maximum effect—we find that we have an after-turning nystagmus horizontal, because we turned him with the head erect and therefore irritated the horizontal canal, of 21 seconds. After waiting a few minutes to allow this irritation to subside completely, we will turn him in the opposite direction. Assuming that we have obtained a maximum re-action and that the ratio just mentioned of two to one is approximately correct if the right ear were dead, then all

of this re-action comes from the left ear, and on turning him in the opposite direction we should get—if the right ear is dead—approximately one-half of the 21 seconds just obtained, or 10 to 11 seconds. Let us turn him, and after 10 turns we get not 10 or 11 seconds but 23 seconds; it is therefore obvious that the right horizontal canal is functioning and functioning quite as well as the left horizontal canal.

For practical purposes we may say that testing the superior or frontal canals, in addition to the horizontal, demonstrates absolutely a functioning labyrinth. To test the frontal canals we incline the patient's head 90 degrees forward and rotate him with his head in this position. Irritation of these canals produces subjectively more irritation than that of the horizontal, and we get associated with our nystagmus, which is rotatory in character, a definite falling re-action. As I have demonstrated this patient before, I intend today only to turn him five times with the head 90 degrees forward, as this will produce sufficient re-action to demonstrate the functions of these canals. We will now turn him with the head 90 degrees forward five times. After five turns to the right we stop him. Ask him to sit up straight, and observe the falling. You will see that he is forcibly falling to the right; he is actually trying to push himself out of the chair. Ten turns to the left produce, as you see, a falling in the opposite direction. The curious fact about this falling is that the patient feels as if he were falling in the opposite direction and in his endeavors to resist this sensation of falling he actually pushes himself over and falls in the opposite direction forcibly.

I trust that we have made clear the fact that this man has total deafness in his right ear; that he has a normally functioning vestibular branch of the right 8th nerve. The cause of this deafness is unknown; it dates back to childhood.

As our time is somewhat limited this afternoon and I want Dr. Mackenzie, who has come from Philadelphia to attend this clinic, to discuss my talk, I will stop, and I take pleasure in introducing to you Dr. George W. Mackenzie of Philadelphia.

30 West 48th Street.

DISCUSSION

DR. MACKENZIE: Concerning the technique of the functional hearing test, as presented by Dr. Hetrick today, it is the same as that which will probably be adopted at a meeting in Washington tomorrow, by the committee to standardize the functional hearing test and the fork to be used in making the tests.

The subject of the labyrinth or inner ear requires many hours of study before one may feel that he is qualified to take up the work. I recall that when Barany first gave lectures on the subject of the non-acoustic labyrinth, his course extended over a period of twenty hours. When the course was completed the average student felt that he was more confused than he was before he took the course. Many of the students would take a second course of twenty hours, at the conclusion of which most of them would give it up as a subject too deep to be comprehended by the average man. By the time they completed a third course, they would usually become intensely interested and would continue the work.

Concerning the functional hearing test, it usually requires from twenty to thirty hours before one can fairly comprehend the technique, and interpret the findings. For Dr. Hetrick to attempt to cover this whole field, that is, the hearing apparatus and the vestibular apparatus combined, in a single hour, you can understand what he is up against; notwithstanding, Dr. Hetrick has done especially well. I believe that no one could have done better and very few as well.

Instead of attempting to review all that Dr. Hetrick has covered, I will with your permission, limit my remarks to the A B C's of the subject of the vestibular labyrinth.

We understand by nystagmus an involuntary to and fro movement of the eye. We divide nystagmus into two grand divisions; first the undulatory, and second the rhythmic. By undulatory nystagmus we understand that form in which the to and fro movement occurs with the same rapidity. In other words, the movements may be compared to those of the pendulum of a clock. This form is also referred to as the oscillatory.

In the case of rhythmic nystagmus, the movements occur with unequal rapidity. The movements are jerky in character; there is a quick movement followed by a slow return.

There are some odd forms of reaction of the vestibular apparatus, where, instead of obtaining the typically rhythmic or jerky movements, we get irregular movements and deviation of the eyes, and rarely, a strabismus without nystagmus. Of these irregular reactions we shall have little to say today. The undulatory form of nystagmus is found in those cases where there are defects of central vision. For instance, a child born with a lesion in the macular, or in the maculo-papular bundle, which controls central vision; the patient is unable to find the central fixation point, necessary for the sharpest image. In hunting about for this more acute vision the patient develops oscillatory movements of the eye, until eventually it becomes a habit movement which continues throughout life. If a defect in the central vision occurs after the twentieth year, this form of nystagmus is less likely to occur.

I told you in the beginning that nystagmus is an involuntary to and fro movement of the eyes. I would like to qualify this a little and state that undulatory nystagmus may be temporarily inhibited by a command from the observer, just as the pill-rolling movements of the fingers may be temporarily inhibited in the case of paralysis agitans. Furthermore, undulatory nystagmus resulting from central vision defects, may become rhythmic to the left when the patient looks to the left and rhythmic to the right when the patient looks to the right. This is due to the physiologic element of which I shall speak shortly. Undulatory nystagmus is not associated with vertigo in contrast with rhythmic nystagmus.

All normal individuals, when they look intently to one side or the other, manifest a rhythmic nystagmus to the particular side toward which they are looking. In the case of physiologic nystagmus the intensity of the nystagmus to the right, when looking to the right, is equal to the nystagmus to the left, when looking to the left. It is never present when looking straight ahead. Thus you see that in the case of undulatory nystagmus, when the patient looks to the right, the character of the nystagmus changes from the undulatory to the rhythmic form because of this added influence of the physiologic element.

Rhythmic nystagmus, I stated before, is composed of a slow movement in one direction and a quick return to the primary position; in other words, it is jerky in character. It is generally as-

sociated with vertigo, which is absent in the undulatory form. The causes of rhythmic nystagmus are located (1) in the inner ear or vestibular nerve or nuclei, (2) physiologic, as I have intimated before, and (3) paresis of one of the extra ocular eye muscles. It is the vestibular type of nystagmus that Dr. Hetrick has been speaking of today. Normally we are under a constant condition of so called tension or tonus. From the vestibular apparatus in the inner ear there is what is equivalent to 4 ma. of electrical tonus, emanating from the vestibular apparatus of each side. For instance, by applying 4 ma. of galvanic current anodal polarity, to the right side, we suppress the normal tonus on that side, when the patient will immediately manifest a nystagmus to the opposite (left) side, which could only happen in the presence of a normal tonus on the left side. The same nystagmus is manifested in the case of a fractured skull that involves the temporal bone on one side, destroying the normal tonus on the injured side, and allowing the normal tonus on the uninjured side to operate independently. It is well to bear these facts in mind for Bezold has observed in a large series of basal fractures, at least one-fourth of them involve the petrous bone of one or both.

TECHNIQUE OF THE BLOOD CLOT DRESSING IN MASTOID OPERATIONS.—J. A. Stuckey, M.D., F.A.C.S., *Eye, Ear, Nose and Throat Monthly*, Vol. 1, No. 5. Three points are emphasized: “(1) Do a thorough operation; (2) Produce a minimum amount of traumatism of the soft tissues; (3) Use an antiseptic in cleansing the wound that does not interfere with the integrity of the blood clot.” Doctor Stuckey has found that, in his cases, success depended upon the after-care. That which caused the doctor the most concern was, “the middle and external auditory canal through which drainage must come.”

W. G. S., Jr.

EAR COMPLICATIONS ASSOCIATED WITH DISTURBANCES OF THE UPPER RESPIRATORY TRACT*

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IN its association, both anatomical and physiological, with the upper respiratory tract it is obvious that the ear can become involved in pathological conditions in two different ways, and two only. The first is a mechanical participation in its inception, brought about by obstruction of the Eustachian tube, however induced, which interferes with the normal aeration or ventilation of the tympanic cavity, and which also throws out of balance the normal relation between the air pressure within and outside of the tympanic cavity. The second cause of participation arises from the invasion of the precincts of the ear by micro-organisms, which may either originate within the upper respiratory passages or be transmitted to the ear through these passages as a path in the course of a general systemic infection. These micro-organisms effect their entrance to the ear, in nearly all instances, through the Eustachian tube, but it is possible for them to find entrance through the blood-vessels and lymph channels. In the main, the ear complications which are brought about in the first manner, by the obstruction of the Eustachian tube, are functional disturbances of various sorts, or slowly developed organic changes which are not truly inflammatory. On the other hand the micro-organisms induce inflammations of every grade of intensity, with tissue destruction and alarming extensions which often terminate life itself. Complicating aural conditions also develop, which are caused by both tubal obstruction and bacterial invasion at the same time, exhibiting a mixed character throughout their course. From these generalities, outlining the ground for our study, let us proceed to particulars.

Obstruction of the Eustachian tube is caused mechanically by anything which impinges upon the mouth of the tube. It may be occasioned by the presence of cicatricial tissue or to bands of adhesion, resulting from inflammatory or ulcerative processes in the

*Prepared for the Annual Meeting of the O., O. & L. Society, Chicago, June, 1922.

nasopharynx, or from unskilful operative measures in this region. It may also be due to large masses of adenoid tissue, or to polypi or new growths, malignant or otherwise, in the nasopharynx. Also to large posterior hypertrophies or to contacts of posterior hyperplasias of the lower turbinated body, or to the upward pressure of enlarged tonsils. Whatever the cause the effect upon the ear will be the same and the patient will complain of deafness, which may become very marked and troublesome, with annoying tinnitus, and, probably, some degree of autophony, with other lesser symptoms. Objectively, in consequence of the rarefied air in the tympanic cavity which is always occasioned by Eustachian obstruction, we find the well-known indications of a depressed drum-head, distortion or absence of the cone of reflected light, a foreshortened malleus, marked prominence of the short process, and exaggeration of the anterior and posterior folds. If the drum-head is long maintained in this retracted position there results a degenerative change in the intratympanic muscles, especially in the tensor tympani, and, ultimately, a general degeneration of the entire tympanic cavity, with marked and permanent loss of function.

Of less severe and obstinate type are the far more frequent cases in which obstruction of the Eustachian tube is temporary and perhaps only partial, induced by a thickened mucosa about the mouth of the tube and in the pharyngeal end of the tube itself, with increase of local secretion. In its simple and active form this condition is brought about, in the great majority of instances, by an acute rhinitis, or common "cold in the head." This is a borderline condition inasmuch as the Eustachian obstruction, while the predominant feature, is largely due to bacterial action, though the effect remains largely mechanical and no inflammatory process, in favorable cases, is started in the tympanic cavity itself. This is because the micro-organisms in such cases do not actually reach that cavity. In fact it would seem that nature's mode of saving the tympanum, and guarding it from invasion by bacteria, is by this very blocking and temporary disuse of the tube which affords them ingress. For this reason I hold that all forcible efforts to open the tube during the continuance of an acute coryza, and even during its subsidence, no matter how distressing the aural complication may become, are to be absolutely prohibited. Patients should be

enjoined to blow the nose into the handkerchief held before it, without any compression of the nostrils by the fingers, and only gently at that. Many are the cases where an inflammation of the middle ear is started by a disregard or by ignorance of this simple precaution. Violent coughing or sneezing and, in my judgment, the use of any form of nasal douche are likewise to be avoided during the continuance of an acute rhinitis, for the sake of the ears, though a nasal spray may be advisable.

More chronic in its manifestation is the participation of the Eustachian tube in so-called "throat deafness," or tubal catarrh. Chronic rhinitis and the various forms of chronic pharyngitis, as well as the indirect effect of adenoids, turbinal hypertrophies and hyperplasias, especially if posterior, and the irritative effects of enlarged or diseased tonsils all may be regarded as causative factors in increasing the hypersecretion and ultimately establishing a chronic hyperaemia and thickening of the tubal and surrounding mucosa. In this instance the tympanic cavity itself becomes involved secondarily and we have, in lesser degree, any or all of the ear symptoms which were enumerated above, but still without pain or any actual inflammation in the tympanum. The deafness and the tinnitus are always the predominant ear symptoms and these show marked variation in the early years of involvement, with striking remission during the summer season. The condition of the nasopharynx, as influenced by the weather and by acute colds, is the chief factor in determining this variation. The tympanic affection is progressive, however, and unless checked by appropriate treatment leads on to further degenerative changes, so that the original tubal catarrh becomes a chronic catarrh of the middle ear. Even if the original post-nasal affection is greatly modified or improved the ear becomes more and more deaf and incapable of improvement.

A sub-acute condition of the middle ear, also dependent upon a blocking of the Eustachian tube and usually without any acute participation in the nose or nasopharynx, is the so-called *otitis media serosa*, which should receive brief mention. This name, though commonly employed, is ill chosen because it implies an inflammatory state of the middle ear, which in point of fact does not exist. It is simply a physical effect of the continued closure of the Eustachian tube—the consequent lessened air pressure within the tympanum

causing an outflow of serum from the capillary vessels in the tympanic walls and its accumulation inside the tympanic cavity, where it is usually readily seen by reflected light, inside the drum-head, the diagnosis being easily confirmed by other well known tests. Sometimes a heavy admixture of tenaceous mucus makes the treatment more difficult, but attention to the nasopharynx and Eustachian tube, to establish tubal drainage and, if that fails, evacuation of the fluid through an incision in the drumhead, restores the ear to a normal condition.

Coming now to the second way in which ear complications arise in association with diseased conditions of the nose and throat we face an entirely different picture from the foregoing. Inflammation in all its varying degrees is the characteristic manifestation of microbic invasion of the ear through the Eustachian tube, and tissue destruction follows closely upon this. The micro-organisms which most frequently effect an entrance to the ear from the nose and throat are the streptococcus, the pneumococcus, the staphylococcus albus and aureus, and the bacillus of Friedlaender. There have also been found the influenza bacillus, the diphtheria (Klebs-Loeffler) bacillus, the tubercle bacillus, Vincent's bacillus and at least six others of lesser importance.

The origin of these migrating micro-organisms may be from any part of the upper respiratory tract where either acute or chronic inflammation is present. Their development is especially favored by the presence of lymphoid tissue and we therefore find a peculiar liability to infection of the ear in patients with adenoids and hypertrophied or otherwise diseased tonsils, or with hypertrophies or hyperplasias of the turbinated bodies. Another source of infection is from purulent inflammation of the accessory nasal cavities—especially the ethmoidal and sphenoidal sinuses, the frontal and maxillary being somewhat less menacing. Diphtheria is always liable to cause middle-ear infection, and scarlet fever and measles are particularly likely to involve the ear by extension from the throat, which is first affected. The influenza bacillus probably follows a similar course. Tuberculosis and syphilis may infect the ear by way of the throat but there is no doubt that both these diseases may also involve the ear, in any part of its structure, by transmission through the blood current and the lymph. Lastly the

amniotic fluid, in the new-born, may find entrance to the tympanic cavity through the Eustachian tube and cause the so-called *otitis media neonatorum*.

The mode of entrance of these various infective organisms from the nasopharynx through the Eustachian tube is greatly favored by violent coughing and sneezing and by too forcible blowing of the nose. Sea bathing and particularly diving, either in swimming tanks or in the open, is often the cause of middle-ear inflammation, catarrhal or suppurative, and this is undoubtedly due not so often to the impact of the cold water as it is to the habit of all swimmers and divers of blowing the nose violently each time after the head has been immersed. The infective organisms which thus find entrance to the ear may come from the impurity of the water, but are more likely to be driven in from the nose and throat where they were previously lodged. The same is true of infections from the entrance to the ear of solutions, which are even antiseptic in themselves, through the nasal douche. In my own experience I have had four instances of patients who have come to me with violent otitis media directly traceable to the use, or misuse, of the most approved little glass douche which is in such popular favor at the present time. Overzealous or untimely inflation of the middle ear by means of the catheter or Politzer bag may also facilitate the passage of infecting bacteria through the Eustachian tube. The special liability to tympanic infection in children is explained by the prevalence among them of the exanthematous diseases; by the increased lymphoid tissue and especially the presence of adenoid growths in childhood, which favor the lodgment and propagation of bacteria; and by the greater ease with which entrance to the ear is effected through the more horizontal position and the relatively larger caliber of the Eustachian tube in early life. Rare instances must not be lost sight of in which migrating micro-organisms, while traversing the Eustachian tube, do not find lodgment or develop their action in the tympanic cavity at all, but proceed directly onward through the *aditus ad antrum* to the mastoid cells and there give rise to an idiopathic mastoiditis.

Having gained entrance to the ear from the nose or throat the action of the infecting organisms is first exerted upon the mucous membrane which lines the tympanic cavity. In the milder so-called

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catarrhal inflammations of the middle ear, acute or chronic, thickened tissue, with varying degrees of lost function, results from this microbic action, but in more severe inflammations, of the suppurative type, the tympanic mucosa undergoes destructive degeneration which quickly involves the drumhead, with resulting perforation, and this admits further infective material, this time from the external auditory canal. The vascular supply of the lining mucosa now becomes changed and this involves the nutrition of the underlying periosteum. This, in turn, induces bone degeneration and so destruction of tissue not only progresses locally but, in unfavorable cases, involves neighboring structures by wider and wider extension. Thus the mastoid suffers invasion and mastoiditis, with all its dangers, is developed; or the internal ear is invaded, with different degrees of labyrinthine complication; or there may be extension into the cranial cavity itself, with the development of otitic meningitis, sinus thrombosis, extradural abscess or cerebral abscess.

It is very important that at the outset of an ear complication the character of the invading organism or organisms be determined if possible. Not that an exact estimate of the future course or severity of the aural disease can always be attained in this way, because the vitality and power of resistance of the patient may be quite as important a factor as the name of the infecting organism, but, in most cases, a very useful working prognosis may thus be made. The tympanum is normally free from pathogenic bacteria. The initial infection may be monomicrobic, particularly in acute cases, but in advanced stages and invariably in chronic affections the infection becomes polymicrobic. When a perforation of the drumhead admits further infection from the external meatus we find a still larger number of associated bacteria. As a rule when the initial or predominant infecting organism is the streptococcus we have the most active, the severest and most destructive type of inflammation, and the one most likely to lead on to mastoid and intracranial extensions. This streptococcus is occasionally found present in the blood, as well as in the purulent exudations from the ear, and it was thought at one time that this furnished a valuable diagnostic indication of lateral sinus thrombosis. It has since been demonstrated, however, that streptococcaemia exists in the course

of septic infections elsewhere and so it loses its significance as regards the ear, unless combined with clinical evidences of sinus involvement. The pneumococcic infection is less severe and destructive than the streptococcic, but it is more treacherous and more liable to be protracted by unexpected exacerbations and recurrences, and often leads to intracranial extensions. The staphylococcus is less virulent and is rarely if ever the cause of intercranial complications. The diphtheritic bacillus is peculiar in its persistence when once it has established itself in the tympanic cavity. There is often vexatious delay before the negative findings are obtained. The tubercle bacillus is elusive. There may even be a primary tubercular infection in the ear and yet it may not be satisfactorily demonstrated until a minute portion of infected tissue is obtained for examination. The peculiarity of the tubercular infection in the ear is the rapidity of tissue destruction which results, and especially the breaking down of the drumhead, often with small multiple perforations which coalesce, and the establishment of a purulent discharge without any pain. The influenza bacillus probably initiates a primary infection of the ear quite by itself, but becomes very quickly associated with other bacteria and may soon give place wholly to these others, so that the character of the subsequent complication may be determined by the adventitious bacteria. This explains the great variation in the type of infection during influenza epidemics at different times and in different localities.

Thus we have covered the ear complications in the course of diseased conditions of the nose and throat which arise from obstruction of the Eustachian tube on the one hand, and from the infection of the ear by the invasion of pathogenic micro-organisms through the Eustachian tube on the other hand. We have enumerated the invading organisms and noted the place of their origin, the influences favoring their migration and the pathological consequences of their invasion, both in the tympanum itself and by extension to neighboring parts. Finally, we have made a study of the characteristic part taken by each of the principal invading organisms in this process, for the purpose of developing a method of reasonable and useful prognosis in individual cases.

SYMPATHETIC OPHTHALMIA *

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THE general purpose of this paper is to review the subject of sympathetic ophthalmia, viewing it in the light of war experiences which were so rich in eye injuries. Moreover, the fact that the clinical findings were so very different from previous war experiences, were so different from our findings in civil practice, these facts would seem to justify such a review.

One of the outstanding features of the medical history of the late war was the extreme rarity of sympathetic ophthalmia. That this condition was so rarely found becomes all the more noteworthy when we find that it was equally rare in all the allied armies, as well as in the German and Austrian wounded. This rarity becomes almost startling when we compare it with the extreme frequency of what was diagnosed as sympathetic ophthalmia in the Franco-Prussian War where 55 per cent. of the ocular injuries were followed by what was diagnosed sympathetic ophthalmia. Head and eye injuries were infinitely more common in this last war. Civil practice has led us to expect a rather large number of cases of sympathetic ophthalmia. Yet strangely they were not found.

Sympathetic ophthalmia was first described by George Bartisch in 1583. Numerous writers in the following years noted the condition, but it remained for Mackenzie in 1844 to give the first detailed study of the subject. Eight years later the value of preventive enucleation was advocated by White Cooper.

I will not weary you with a report of the various theories advanced in the explanation of the phenomenon.

The pathological changes present in the injured eye have best been described by Fuchs, from whom I quote: "The uvea is distended with densely crowded lymphocytes and plasma cells. In most cases there lie in the midst of this uniform infiltration, focal collections of large (epithelioid) cells, which not infrequently have giant cells between them. Nodules are thus produced which often are like tuberculous nodules."

*Read at the annual meeting of the O., O. & L. Society, Chicago, June, 1922.

This peculiar infiltration may be present in the iris, ciliary body, choroid or even in the sclera. These same peculiar changes have been found in the secondarily affected eye. The claim that these histological changes are pathognomonic of sympathetic ophthalmia and are present in both the exciting and sympathizing eye, have been accepted by most pathologists. Briefly stated the changes show a proliferative uveitis.

Sympathetic ophthalmia consists in the development of an iridocyclitis in the second eye. The symptoms are well known, *i. e.*, photophobia, lacrimation, loss of accommodation, pericorneal injection, tenderness, etc., up to the fully developed iridocyclitis. Deposits on the cornea "are never wanting in the beginning of a sympathetic ophthalmia," according to Fuchs.

Brownlie gives these further symptoms, a contraction of the visual field, a spindle-shaped enlargement (elongation of the vertical diameter) of the blind spot, congestion of the optic disc and retinal vessels, paresis of accommodation and changes in the blood count, marked increase in the large uninuclear leucocytes, decrease in the polymorphous cells. Many of the symptoms, particularly the blood count, I believe, are now recognized as being present in any severe case of uveitis.

There are certain further ideas that are quite generally accepted. The condition arises almost invariably from penetrating wounds particularly in the ciliary zone. It is most apt to occur while the disease is at its height in the first eye although it may occur years later. We must bear in mind at all times that it is impossible to conclude from the clinical picture itself whether we have the type of iridocyclitis that gives rise to sympathetic ophthalmia or not. The most accurate method we have is by a pathological examination of the exciting eye. If the inflammation of the second eye receded more quickly after the enucleation than can be expected under the ordinary treatment of an iridocyclitis, then we have additional evidence of sympathetic ophthalmia. The mere fact that an eye has been destroyed by an accident does not of itself justify the diagnosis of sympathetic ophthalmia, when an iridocyclitis develops in the second eye; all other factors must be ruled out.

Experimentally we have been unable to produce sympathetic ophthalmia in animals. However, Wibant has produced a very interesting effect by injecting fresh horse serum into the vitreous

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of a rabbit. No particular result was noted. However, when horse serum was again injected intravenously two weeks later, there was a marked reaction and an iridocyclitis. When the eye was removed two or three days later there was discovered a nodular choroiditis with lymphocytis and giant cells resembling the deposits in sympathetic ophthalmia. Elschmig, C. T. Cooke and many others regard these and other experiments as proof that sympathetic ophthalmia is an anaphylactic phenomenon. According to Zentmayer, Elschmig's views are that the disintegrated uvea or some portion thereof, in the exciting eye, is reabsorbed as antigen and leads to a hypersensitiveness of the animal and especially of the homologous tissue in the uvea of the second eye. Further absorption of this disintegrated uveal tissue (or of some constituent thereof) leads to an intoxication of the sensitized uvea of the second eye, which manifests itself clinically as an uveal inflammation.

Cooke has suggested that a "possible selective affinity of germs for uveal tissue is developed by implantation into the first eye." "The exciting eye may itself assume the role of a focal infection and become in fact a focus of infection, where the bacteria having predilection for uveal tissue are incubated."

It has been suggested further that the infecting germ carried into the first eye by the injury may have had a definite affinity for some focal infection already present somewhere in the body. Moreover, it is well-known that germs may quite easily develop a predilection for certain tissues. Germs growing in the uveal tract could easily develop an affinity for uveal tissue. Thus it would be quite possible for them to develop in the other eye.

Rosenow and his co-workers have demonstrated something quite similar in cases of iritis arising from periapical abscesses. If we isolate the germs from the tooth and inject them into rabbits we will always get localization and infection at the dental apices and in the iris and there only.

On the other hand, where we have an arthritis from a dental abscess and isolate the germ from the tooth and inject this germ into healthy rabbits we get the localization at the apices of the teeth and at the insertions of the muscle tendons into the joints. In other words, a definite tissue affinity has been developed in the germs.

T. NaKamura has shown that if we immunize a guinea pig

with the uvea of a rabbit, and then inject some of the guinea pig serum into the carotid of a normal rabbit we get no noticeable effect in the rabbit's eye. However, if prior to this injection, the uvea of the rabbit is bruised, then the injection of the immunized serum is followed by a very marked ciliary injection and hyperemia of the iris, and under conditions, also slight plastic iritis not only of the operated eye, but also of the non-operated eye.

From this research we get experimental evidence that traumatized tissue reacts very strongly to stimuli that will not excite normal tissue. This fact has been clinically observed by all of you. For example, after an injury you may get an iridiocyclitis out of all proportion to the injury. There will be no history or evidence of trouble prior to the injury. However, careful examination reveals some focus of infection such as an infected tooth or very septic tonsils, etc., or a strongly positive Wassermann. When these are corrected the eye responds to treatment with amazing rapidity. I have had this happen quite frequently, as you have.

The above experimental data and clinical observations are, I believe, at the bottom of the phenomenon of sympathetic ophthalmia.

Let us first consider the factors that are known and proven. In the first place, sympathetic ophthalmia was diagnosed very commonly during the Franco-Prussian War of 1870. During the World War sympathetic ophthalmia was but rarely observed. Sir William Lister, who was consulting ophthalmic surgeon to the British armies in France, reports that only one case of sympathetic ophthalmia, and that a doubtful one, came under his notice. In a personal communication, Mr. H. L. Eason, also consulting ophthalmic surgeon to those forces, in a report on ophthalmic practice in the Mediterranean and Egyptian Expeditionary Forces 1915-1918, states: "In the period under review there was, so far as I am aware, only one case of sympathetic ophthalmia."

From the French centers, similar reports are given. In the Lariboisiere ophthalmic center, there were seen 6265 military injuries to the eyes with but one case of sympathetic ophthalmia. Lapersonne and Saxe each saw one case in their military services while Sourdille did not see any. Weekers, in the Belgian Ophthalmic Service, did not see any cases. Reports from German literature show it to be equally rare.

Moreover, this rarity of sympathetic ophthalmia is equally striking when compared with accidents in civil life.

Now let us attempt to explain this difference. In the first place, it was not because there were less infected wounds in this war. Nearly every writer has noted the terrific cases of infection that occurred and the wide prevalence of infected wounds.

I believe that the enormous discrepancy between the Franco-Prussian War and the late war, and to a lesser extent in civil practice, can only be explained by stating that sympathetic ophthalmia in the past has been a term that covered several distinct conditions.

Three great advances in medical science must be considered, and, I believe, account for this. First, the Wassermann reaction was unknown in 1870. This means that the syphilitic nature of many cases of plastic iridocyclitis was unrecognized. Remember, too, that the diagnosis of sympathetic ophthalmia is practically always made upon clinical evidence alone. In only a small percentage of cases has there been made pathological examination of the exciting eye and only rarely has there been a competent microscopic examination made of the second eye.

The diagnosis then rests upon the development in the second eye of an iridocyclitis with the characteristic deposits on the cornea. This condition is clinically often duplicated in the iridocyclitis of syphilis. One great lesson the Wassermann reaction has taught us is that syphilis may occur in the cornea in great variety of forms. The classic interstitial keratitis is only one form. It seems to me very clear that syphilis has been the cause of large numbers of cases formerly diagnosed as sympathetic ophthalmia.

A further reason why this war would show a much smaller number of cases of syphilitic iridocyclitis, is that the men were routinely examined for syphilis, and if infected were isolated and treated as never in any previous war. The aid of the Wassermann tests in this respect needs only to be mentioned to be appreciated.

The next great scientific advance that explains many cases is the recognition of focal infections. When we remember the vast number of cases of iridocyclitis caused by infected teeth, tonsils, sinuses, etc., all of which were unknown in 1870, I believe it becomes very clear that a large percentage of the cases diagnosed sympathetic ophthalmia in the past have been due entirely to focal infections.

There are other factors that must be given credit. Injured eyes were given prompt attention and those hopelessly damaged were at once enucleated. Prolapsed tabs of iris were promptly excised. Most of the eyes were so badly damaged as to admit of no question as to enucleation. Soldiers had but little to say as to what was done. Hence an enucleation could be done at once. A statement by Prof. Fuchs in a personal conversation was very illuminating. He said he had performed but two operations for traumatic cataract in spite of the fact that the wards were full of injured soldiers. Most of the cases were so badly injured that an immediate enucleation was done.

These last measures, however, are only of great importance in comparing the wars of 1870 and the last one. In civil cases all such measures have been practiced for several years, although enucleation was not always done as promptly as during the war.

There have been great advances in surgical technic since 1870. Magnetic foreign bodies can now be recognized and removed, thanks to the X-ray and the electric magnet.

These later factors alone, however, do not seem sufficient to explain the rarity of sympathetic ophthalmia during the World War. Syphilis and focal infections seem more potent factors.

TREATMENT

In view of the preceding facts and experiences it seems to me that our treatment of injured eyes must be radically changed. Our aim should be to prevent sympathetic ophthalmia. The treatment then of an eye with a penetrating wound, especially of the ciliary region, should consist, first, of absolute aseptic technic with thorough douching of the conjunctival sac with bichloride of mercury 1,4000 for one minute. There should be prompt excision of any exposed iris tabs. This presupposes specialist care of injured eyes and, I believe, this should be stressed. Foreign bodies should be removed within 24 hours. Every additional hour argues strongly for infection.

As little operating as possible should be performed. If a traumatic cataract has formed, its removal should be postponed until all inflammation has subsided, except where secondary glaucoma sets in. I am making these statements dogmatically, because of the short time allotted to the papers.

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A Wassermann test should be made in every case. A thorough search must be made for any focus of infection. All the teeth should be routinely and thoroughly rayed. An ocular examination even by a competent dentist will not suffice. Any focus of infection should be properly dealt with.

In view of the extreme rarity of sympathetic ophthalmia, I do not believe we are justified in enucleating eyes simply because they are rendered blind by a penetrating injury. A human eye, even if blind, is greatly preferable to an artificial one. There is time to clean up most focal infections or to get syphilitics under treatment before the onset of sympathetic ophthalmia. Moreover, an eye that may appear hopelessly damaged today, may heal up within a week and present a fairly good-looking eye. Sympathetic ophthalmia almost never develops before two weeks.

However, when an eye is so badly damaged as to be beyond hope of vision or preservation in any shape, it ought to be immediately removed.

An injured eye that is practically blind and remains irritable in the absence of syphilis or any focus of infection ought also to be enucleated. Let me emphasize again, however, that the patient ought to be proven free of syphilis and of focal infections before an enucleation is done. For the iridocyclitis, all of you are familiar with the routine treatment—atropine, moist hot compresses and whatever remedy may be indicated. Dionin, 5 per cent., is always recommended, but I have obtained no brilliant results with it.

The statement of Fuch's that "Salvarsan has been used in several cases with distinct success," is full of interest to me, in view of the statements in the early part of the paper.

Gifford recommends, "sodium salicylate 1 gr. per pound of body weight. Thus a 180 pound man takes 20 grs. of sodium salicylate every hour and a half until nine doses have been taken. This with free diaphoresis is repeated every five days. Rest for two days and repeat the five day treatment. Take three courses of five days each with two day rest, then drop to 100 grs. a day for the same period and intervals."

In conclusion, true sympathetic ophthalmia is far more rare than we have been led to suppose.

There is no marked clinical difference between a sympathetic

ophthalmia and a uveitis of focal infection origin, including syphilis.

It seems likely that most cases we have diagnosed sympathetic ophthalmia in the past have been due to syphilis or focal infections.

It is not justifiable to enucleate an injured blinded eye if a good eyeball may be preserved merely because of the danger of sympathetic ophthalmia. We can always wait to complete our examinations before there is any danger of sympathetic ophthalmia.

Any eyeball so badly damaged that preservation is impossible, should be enucleated at once.

A practically blind injured eye that remains irritable in the absence of any focus of infection had better be removed.

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OCULAR MANIFESTATIONS OF INTERNAL SECRETION.—Professor E. Fuchs, Vienna: *Archives of Ophthalmology*; Vol. LI, No. 4. In diseased conditions that appear to be dependent upon hypofunction of a gland, following its removal, the pathology should disappear upon administration of the same gland. Again, when the gland is given to a healthy individual it should be followed by evidence of hyperfunction.

Professor Fuchs states that: "This hypothesis has been found to be true in but very few instances and 'scarcely ever with regard to the eyes'." (Here it would seem that one had to deal with a problem in drug pathogenesis pointed out by Hahnemann, that drugs, when administered to a healthy individual produce symptoms that are *similar* to diseased conditions and *not the identical* diseased conditions themselves.)

W. G. S., Jr.

“NYSTAGMUS”

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NO one, even in a long professional life, could see or become familiar with all the phases of this very complex condition of which the outward sign is an oscillation of the eye-balls, either separately or together. Unilateral nystagmus would seem to me to be rare if I am to judge from my own experience. Two cases include all of this type which have come to my attention—one patient was suffering from Multiple Sclerosis and was in coma when the right eye suddenly began to move back and forth with occasionally a vertical element, and the other case was one of Spasmus Nutans seen only a few months ago.

Vertical nystagmus, or nystagmus with a vertical element, is an exceedingly rare condition also.

The irritative type which is said to exist in the early stages of labyrinthitis is also, according to my experience, exceedingly rare, or, perhaps, should we say that like the symptoms for aconite, we are rarely called early enough to observe them. Even cases of labyrinthitis with the type of nystagmus due to loss of tonus of one labyrinth are uncommon because the process of destruction is usually not sudden enough—it is usually a slow process and the dead ear is present with no history, save that of running ear, or perhaps some dizziness. Of congenital nystagmus passing along in a family I will also say but little, because there has always been an associated ocular condition present in the few cases of this type coming to my attention, and it seemed impossible to ascribe the nystagmus to any position save that of a secondary and consequential symptom due to defective vision.

Nystagmus might be not too accurately said to be either central or peripheral. The central type, due to disease of the nuclei of the nerves of eye control and the peripheral type in which imbalance results from loss of tonus, from or guidance by, some associated organ like the eye or ear.

Good vision is essential to effective fixation and fusion, and good illumination likewise. Fixation is most difficult in poor light

and the strain resulting from an attempt to fuse in poor light in stereoscopic muscle experiments should be experienced to be appreciated.

If one will fix in a stereoscope and obtain perfect fusion and then gradually reduce the illumination, soon the strain becomes most annoying. It would be very valuable if someone would make a set of experiments to estimate the effectual degrees of illumination. From personal tests, with myself as the person looking through the stereoscope, it took but a few moments to demonstrate that the greatest bar to effective fusion was poor light and that the strain to overcome this handicap belongs in the class with hyperphorias.

I have never seen a case of miner's nystagmus, but from the experiences mentioned above, would not hesitate to say that poor illumination is certainly a most important factor in producing the disease. The human eye is not in the habit of remaining in one position for any length of time. Studies of eye habits in reading have shown conclusively that the eye jumps from place to place. The details of its habits are most interesting but out of place here. Anyone who has made an effort to hold the eye or eyes steady in one position while the fields of vision are measured will, if he be painstaking and truly observing, realize that the human eye is "on the move." While the movement is generally along one line of direction in reading, in other phases of use of its superb function of detail vision, the movements approximate nystagmus. The nystagmus which goes with poor vision is not much different from that quest of the normal eye for a momentary fixing point or the eye of infancy before development has conferred sufficient cerebral power to occasionally inhibit the "humming bird" traits of the human eye. The tendency of the eye to oscillate is present in many eyes of normal persons as soon as the inhibitory influence of good fixation is in abeyance. This is shown in many normal persons whose eyes will oscillate when the eyes have been drawn into an extreme position and the important factors of the extreme position are fatigue and poor fixation. All forms of human energy have in them the rhythmical increase and decline. Any display of effort, when sustained too long, or if not accurately co-ordinated, begins to show an interval rather than a smooth and imperceptible change from the high point to the low point; resulting in jerky movements or tremor.

There are quite a few cases of amblyopia exanopsia which are

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undoubtedly due to actual nerve disease rather than, as we now term them, functional in character. In these cases, one can get a clue of abnormal nerve control or premature fatigue or defective fixation, as the case may be, by noting the immediate presence of nystagmus when the light from the ophthalmoscope is thrown into the eye. The poor eye will oscillate very markedly sometimes and in other cases, the good eye will also surrender its initiative when the fixing point is with difficulty kept in clear view. The normal eye should be able to fix, shall we say, upon a remembered point or object and the glare of the lamp disturbs but does not interrupt the effort. The eye with abnormal nerve control, and usually this is central, is unable to maintain its effort under the same handicap.

Brain tumors are not frequent, but in those which I have seen and followed for some time, nystagmus was never a symptom. A case of tumor of the corpora quadragemina as shown by autopsy, suffered much from unsteadiness in gait and station, but had no eye muscle symptoms whatever.

Tumor of the eighth nerve did not in a single case show nystagmus. Some eight or ten cases of tumor of the frontal and fronto-parietal lobes, all of which came to autopsy, did not show nystagmus.

One case of cerebellar abscess in a child showed nystagmus very prominently.

The disease with which nystagmus always comes to my mind is, multiple sclerosis. To be sure, the cases in which nystagmus or eye symptoms do not appear, are not so apt to come before the ophthalmologist as the neurologist, but I have always been connected with a large general hospital and have been working closely with a neurologist and an internist, and fully appreciate that some cases of multiple sclerosis never do show eye symptoms, and again it has been borne in upon me that the first symptoms of this disease may be a scotoma, evanescent in character. Also, this disease sometimes seems to abate most amazingly. There are about a number of children, with defective eye-sight which, after careful observation, will show some nystagmus, perhaps in only the extreme positions of the eyes. I have three cases now under observation of this type, and in one we were able to make the diagnosis only after two years of watching. Nystagmus is in these cases a most important symp-

tom, and seems to be due to inability to maintain steady fixation because of weakened nerve control, and not due to poor vision.

Nystagmus due to defective fixing power or poor vision, has generally been described as always oscillatory in direct contrast with the rhythmical nystagmus of ear disease. Once before I have called attention to the observation of Mackenzie, that ocular nystagmus is usually oscillatory but may become rhythmical. This is certainly true and I am as sure that this is true as I am of anything in the way of clinical observation.

It has come to be the habit of many to accept the hard and fast statement that eye nystagmus is always oscillatory and that ear nystagmus is always rhythmical. Dr. Mackenzie's exact words are "Ocular nystagmus is oscillatory, but may become rhythmical on looking in an extreme direction." This is a most important observation and should receive more attention and be given consideration in the process of examination of cases of whatever kind in which nystagmus is a symptom.

Nystagmus, even though marked when associated with poor vision, need not in any way interfere with equilibrium and I have the photograph of a man with vision of $15/40$, and no better with a glass, optic nerve heads white: nystagmus constant and horizontal in character, who climbed to the top of a flag pole on the top of a five-story building, stood on the top of the pole holding the eagle in one hand, in order to have a satisfactory business letter heading to advertise his calling.

The diagnosis of nystagmus does not seem difficult except in differentiating ear and brain nystagmus, and in these cases because the patient is too ill to get up or too stuporous to co-operate. Nystagmus has not been a factor in cerebral syphilis except where syphilis has reduced the vision as in the incomplete atrophy of the optic nerve in children.

My experience with hydrocephalous does not give me assurance to speak upon the subject. The cases of hydrocephalous coming to my attention have died early.

As stated before, I have had no experience with miners or the ailments of miner's eyes, but from the experiments mentioned previously, am sure that defective illumination is the main reason for the development of the disease.

There has just appeared in England the report of the Miner's

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Nystagmus Committee. This committee says that defective illumination is the essential element in the causation of the disease. Dr. Llewellyn examined 2,000 miners. Dr. Eddison examined the miners from the standpoint of the psycho-neurologist, Mr. Pooley for errors of refraction, the photo-metric tests of the working conditions were made by Dr. Llewellyn. Dr. Haldane examined the cases and tested for effects of "mine-gases." Without taking too much time to introduce all of their conclusions, a few points are in order. Errors of refraction, alcohol and heredity are considered as secondary. *Large* numbers of miners have the disease but *few* are incapacitated. The compensation claims have jumped from 30 in 1907 to 515 in 1918.

The strained position of the eyes is not given as prominent a place as a causative factor as one would imagine and figures are given to show that men who "hole out" are not so likely to have the disease as others who work with the light further away from the work. The suggestion made to eliminate the nystagmus is "better light."

Mine gases and alcohol belong with the accessory causes. This commission does not accentuate the need for glasses but advocates white-washing the walls where possible and shows the need for cleaning the electric bulbs, lamps, etc., and supports their contention with proof that is most convincing and gathered by scientists in a scientific manner.

14 Eighth Avenue.

THE IMPORTANCE OF SELECTING THE PROPER TREATMENT FOR ACUTE MASTOIDITIS

GEORGE J. ALEXANDER, M.D., F.A.C.S.,

Philadelphia, Pa.

THERE is, in the practice of medicine, what is known as the selective case, a term here used to specify the peculiar adaptability of a particular affection, for the application of certain therapeutics or surgical measures.

If, however, conservative treatment, consisting of topical applications, internal medication, etc., is chosen as the preferable method for the cure of an acute mastoiditis, associated with acute middle ear suppuration, with the assurance that it will accomplish the desired result, without surgical interference, one's mind naturally reverts to the opening statement, and then becomes skeptical of the advantage of the rule, to say nothing of the result. More especially would this be the case, if this method or idea were to be applied to a patient where the mastoid condition was known to be accompanied by other more or less serious complications.

On the other hand, it is important that we recognize the value of an opinion based upon large experience and extensive study of a particular subject. Of equal importance, too, is the possession of *balance in the form of sound judgment*, needed at times to avoid certain pitfalls that result from, I will say, unintentional over-enthusiasm.

It is not the intention to advance the idea that conservative treatment should never be practiced in acute mastoid disease; to the contrary, it should. Undoubtedly many cases have been and will continue to be aborted and perhaps cured by this method; but, here again comes in the importance of the "selective case," which in this instance would include practically only an acute simple mastoiditis associated with a simple or at the most, a simple serous otitis media. We know, too, that in the majority of cases of acute serous or suppurative otitis media, where the mastoid process is of either the diploetic or pneumoatic type, there is an associated mastoiditis without symptoms or evidence of any kind, and which is thought to clear up spontaneously though in many instances it never does

entirely disappear, but remains as a sort of dormant state in the cells, to be aroused perhaps to serious activity at some future time, by a subsequent acute inflammatory middle ear condition.

Having discussed the possibilities of the selective case, permit me to again call attention to that great essential, balance or sound judgment, so frequently absent, where its presence or possession would do much to regulate the efforts of men by discouraging them in their desire and the belief in their ability to do the impossible, an example of which is the selection of a conservative course of treatment for the cure of a purely surgical disease, exemplified by the following conditions:

An intermittent suppurative discharge from the right ear for thirteen years following an attack of pneumonia at the age of six months, accentuated by five subsequent attacks of pneumonia; scarlet fever, influenza, whooping-cough, chicken-pox and measles; pain being associated with the initial attack and all subsequent exacerbations; finally, marked dizziness, which at times causes her to sit down or take hold of an object to prevent falling and always worse when the ear is not discharging freely.

Marked tenderness, slight thickening and decreased mobility of the tissues over the affected mastoid process, partial obliteration of the posterior auricular fold and the ear pushed a trifle out of alignment.

A great deal of thick cheese-like exudate and debris in the external auditory canal, the drum membrane red and swollen, bulging and perforated, with large granulations from the tympanic cavity pushing through the opening, etc.

Functional tests of the hearing of the affected (right) ear.

1. Conversational Voice, 6m.+

Whispered Voice, 3m.

Weber, lateralized to the left.

Schwabach, 35" short.

Rinné, positive.

Low Tones, 25" short.

High Tones, normal.

2. *Romberg*.

No static ataxia.

Eyes open, standing on left leg, 95 per cent. normal.

Right leg, 70 per cent. normal, with a tendency to fall to the right.

Eyes closed, standing on left leg, 75 per cent. normal; right leg, 50 per cent. normal.

3. *Gaits.*

Eyes open, forward and backward, 95 per cent. normal.

Eyes closed, forward and backward, 75 per cent. normal, with a deviation to the right.

4. *Examination for Spontaneous Nystagmus.*

No spontaneous nystagmus on looking straight ahead at a distant object.

5. *Turning Nystagmus Tests.*

Ten turns to the left, head erect, ← 20" to the Right.

Ten turns to the right, head erect, → 24" to the Left.

Ten turns to the left, head forward 90°, ↙ 19" to the Right.

Ten turns to the right, head forward 90°, ↘ 19" to the Left.

6. *Caloric Test.*

After syringing the right ear with cold water (60°F.) with the head erect there was a marked rotary nystagmus to the left lasting sixty seconds. Patient feeling quite dizzy.

7. *Fistula Test.*

Compression, rotary nystagmus to the right. ↙

Aspiration, negative.

8. *Galvanic Test.*

Right Ear

Kathode 2½ ma. ↙

Anode 4 ma. ↘

Left Ear

Kathode 4½ ma. ↘

Anode 4 ma. ↙

Associated with all these aural findings were adenoids, deviated nasal septum and a hyperplastic condition of both inferior turbinates.

Upon being advised by the writer that a radical mastoid operation would be the practical means of combating the aural conditions, the patient was taken to an older and eminent otologist, who for years has given a great deal of attention to the conservative treatment of otitis media and mastoiditis and for which he claims results superior to those of surgical methods. The conservative idea

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appealed to the parents of the patient, and was proceeded with and continued for about six months, when a mastoid operation was finally done by another otologist, at the instance of the parents.

This abstract of an actual case serves to illustrate, in a manner rather satisfactory, at least to the writer, the thought he wishes to convey when referring to the importance of the part played by *balance, or sound judgment, as to whether a case treated by the conservative method, is or is not, the "selective one."*

1831 Chestnut Street.

ALCOHOLIC INJECTION OF SECOND AND THIRD DIVISIONS OF TRIGEMINAL NERVE.—Francis C. Grant, M.D., *Jour. A. M. A.*; Vol. 78, No. 23. The value of alcohol in the treatment of trifacial neuralgia, when injected into the trigeminal nerve has long been known. To be effective the alcohol must be injected directly into the nerve trunk, enter the nerve sheath, and actually come in contact with each individual fasciculus. In order to standardize the method of injection an instrument known as a zygometer was used. Dr. Grant reviews the amount of experimental work performed on the cadaver and also a series of patients in which this method of injecting the nerve was used. His conclusions are as follows:

"1. Alcohol injections of the three divisions of the trigeminal nerve are of much value in treatment of tic douloureux, as an adjunct to the treatment of painful growths about the face, tongue and jaws, and in masseter spasm.

"2. By the use of the zygometer and protractor, an attempt has been made to render more accurate the description of the technic for injecting the maxillary and mandibular divisions of these nerves.

"3. Clinical experience has coincided with anatomic studies. Injections of the maxillary division should be made from the 3 cm. mark. The needle should subtend an angle of 100 degrees from above downward in the horizontal plane, and 115 degrees from before backward in the vertical plane. The nerve is reached from 5 to 5.5 cm. from the surface.

"4. Injections of the mandibular division should be made from the 2 cm. mark. The needle should subtend an angle of 90 degrees in the horizontal plane and 110 degrees from above down-

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ward in the vertical plane. The nerve is reached from 4.5 to 5 cm. from the surface.

"5. By applying these facts to a series of injections clinically, the percentage of failures to reach the nerve trunks has been materially reduced."

W. G. S., Jr.

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Editorial

POST-GRADUATE COURSES ABROAD

IN fairness to those who contemplate post-graduate training in Eye, Ear, Nose and Throat Diseases, the Editor wishes to report briefly his experience abroad this Summer. He left New York on June 24th with a party of thirty-three Ear, Nose and Throat Specialists, carefully selected men, none of whom have had less than one year's post-graduate training, and some as much as three years. A few in the party have been in the practice of the Specialty for fifteen years or more. They were, therefore, well qualified to judge of the opportunities offered in Vienna, Austria. Shortly before sailing a few men of the party felt somewhat doubtful as to the treatment they might receive from the teaching staff in Vienna owing to some unwarranted rumors that had been circulated in America. In answer to this we found on reaching Vienna that Americans were just as welcome now as before the war. Contrary to the rumors we found no evidence of discrimination of any kind against Americans. The teachers whom we met were of the same high class as formerly. The group of thirty-three Americans were divided into three classes of eleven men each. They took courses with Professors Alexander, Hajek, Fein, Frey, Neumann, Ruttin, Dozent Hirsch, and from a dozen or more of the Assistants of these men. As an evidence of the satisfaction felt by the students in the group one-half of them decided to remain beyond the six weeks originally planned, and at least one-fourth will remain for nine months or more. Others who found it impossible to plan for a longer stay expressed the desire to do so at some future time. Every one expressed himself as having been well repaid for the time and money spent.

It is to be hoped that at some time in the near future American

Institutions will be able to offer the post-graduate student equal, if not better, opportunity for study as is now offered in Vienna, and it behooves every loyal American physician to devote his energy to that end.

G. W. M.

SCATTERED NOTES ON THE TUNING FORKS

OF late, through the instruction of the able editor of this JOURNAL, the author has had a flood of light thrown upon the value of the tuning forks. Prior to this time poor forks and bad technique led into a slovenliness and indifference which meant that no great value was received from the tests. No progress will be made by any otologist until a real interest and real care is taken. These jottings, though haphazard, may aid someone else past a fault.

1. You may be working with forks for years without knowing their fundamental qualities, and, as no two forks are alike, even if of the same pitch and supposedly standardized, it is primarily important to see how each of your forks tests out upon a series of normal individuals. You must find what is the normal AC and BC for your forks; you will then know the Rinné and will know if your fork is one which on the normal individual gives the normal difference of forty seconds between AC and BC. As Mackenzie points out, it is not of great moment if you cannot adjust your fork to the normal time hearing of 110 seconds AC, 70 seconds BC, but it is important to have your fork testing the normal Rinné as 40 seconds. Thus a fork giving a normal AC as 100 and a normal BC as 60 will be satisfactory.

2. In spite of the rapid declination in the vibration of modern forks, the fact remains that a fork hit a sharp blow is heard longer than one struck lightly. This element of error may be largely avoided by care in acquiring a definite method in striking the fork, or better still, by using a striking pendulum such as described recently by the author in this JOURNAL.

3. In testing one's own air conduction it can readily be observed that much depends upon the position of the tines of the fork at the external auditory meatus. Strike the fork and hold it vertical; pass it from before backward and from above down-

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ward, noticing the positions where the sounds are best heard. The effect of the pinna on waves coming from the different directions will be remarked. It is well to stand in front of a mirror to observe locations. Now, strike the fork again and hold it vertically alongside the ear; rotate the fork slowly on its long axis and notice the difference in volume of the tone as it passes into oblique positions.

4. Test your own hearing for evidences of fatigue by identical tests morning and evening, being careful that the tests are carried out in equally quiet surroundings. Or better still, if someone should be reading aloud to you of an evening, test yourself before and after the session. Mackenzie emphasizes a fatigue factor in the testings made when the patient listens continuously to the fork dying out. It is his practice, both in getting the AC and BC, to withdraw the fork repeatedly during the test to avoid this fatigue.

5. It is important in repeating the bone conduction tests to use the identical amount of fork-pressure each time. In testing BC behind the ear, it is well to note in each individual case the exact location where the conduction is best carried. This spot should be used in making repetitions.

6. Obviously important factors are: Identical technique, alertness in recording (that is, alertness in starting and stopping the stop-watch), alertness and intelligence of the patient, and quiet patience and carefulness on the part of the observer. D. M.

LOCATIONS WANTED FOR EYE, EAR, NOSE AND THROAT SPECIALISTS

HERETOFORE, the Editor has been appealed to by young men fresh from post-graduate courses for suggestions as to where to locate. In quite a few instances he has been able to bring together the older busy man and the younger, yet unsettled specialist. In all such instances where he has been successful in finding for the older man an assistant and for the younger man a location the results were very satisfactory to both parties.

The future policy of the Editor will be to try to bring to-

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gether these parties through the pages of the JOURNAL and by personal correspondence.

At the present time there is a favorable opportunity for the right young man to associate himself with an experienced Eye, Ear, Nose and Throat Specialist.

If the aspirant will be kind enough to communicate with the Editor, setting forth his qualifications, he will do his best to place the young man.

G. W. M.

RESOLUTION

STEAMSHIP RYNDAM, AUGUST 22, 1922

AT a meeting of the Mackenzie Group of Viennese Oto-Laryngological Physician Students en route Vienna-United States held this day, the following propositions and resolution were unanimously adopted:

Recognizing the ability of Dr. George W. Mackenzie as a teacher and as a keen observer, and as a compliment to him as the leader of our party; and more especially that we, as a group of otologists wish to give expression of our realization of the clinical value of the Weber-Schwabach Paradox in the correct diagnosis of certain mastoid pictures, we propose that this phenomena be known as the Mackenzie Sign in Mastoiditis, he being the first to give us the correct interpretation of its practical value.

We further propose to use this nomenclature in our writings and reports, and discussions.

Resolved, that a copy of these proceedings be forwarded to the O., O. & L. JOURNAL and *The Laryngoscope* for publication.

DR. H. BIERMAN,
For the Mackenzie Group.

CAVERNOUS SINUS THROMBOPHLEBITIS: REPORT OF A CASE *

BY GEORGE J. ALEXANDER, M.D., F.A.C.S.

Philadelphia, Pa.

IT may be recalled that the subject of a paper read by the writer before this Society in Washington, D. C., last year was "Thrombophlebitis of the Lateral Sinus." The case presented included complications and numerous other features of interest, among them, recovery of the patient.

The case to be presented at this time was one of "Cavernous Sinus Thrombophlebitis;" one reason it is being reported, and another reason is because complications were again prominent in providing additional interest and difficulties in observing, treating, diagnosing, and in all our efforts to save the patient's life, which we failed to do.

Cavernous sinus thrombophlebitis is rare, and little is published concerning this disease other than the symptom complex and its fatal termination.

The principal source is of otitic origin, and extends from the inferior and superior petrosal sinuses. Ballenger reports one case secondary to a lateral sinus thrombus. Another source much less frequent is inflamed nasal accessory sinuses. When it complicates nasal accessory sinus disease, it extends from the secondarily infected eye through the ophthalmic vein to the cavernous sinus. It usually begins in one sinus and may spread to the other through the circular sinus, causing the symptoms to shift from one eye to the other, a differential point between cavernous sinus thrombosis and inflammations confined to the orbital cavity.

I present the following case referred by Dr. W. B. G. Terry, of Philadelphia, with the desire to convey my appreciation of an opportunity such as this, which emphasizes so clearly the valuable experience it offered.

January 2, 1922, Mrs. K. R., age 27 years. Two weeks ago she nursed her little daughter who had pneumonia and an acute discharge from the right ear. Beginning seven days ago and lasting

*Read at the Annual Meeting of the O., O. & L. Society, Chicago, June, 1922.

three days the patient had an intermittent headache associated with menstruation. Four days ago she was awakened at 2 A. M. by a severe pain in the right ear, which has been constant, and though the ear began to discharge on the third day, the pain has been so intense the last two days that morphia and bromides given her by Dr. Terry were ineffective. The temperature not having been above the present 101 deg. F. Previous to this illness the patient had been in good health and had never before had any trouble in her ears.

EXAMINATION: *Right Mastoid Region.* Color normal; the tissues were thicker and less movable than those over the left mastoid region, and there was redness, swelling and tenderness below the tip of the mastoid process.

Right Ear.—There was marked general swelling of the walls and narrowing of the osseous portion of the external auditory canal, which with detritis obscured the drum membrane from view. When the detritis was removed, there could be seen a pulsating light reflex in the posterior inferior quadrant of the markedly swollen drum membrane. There was little moisture in front of the drum membrane, even after inflation. The left drum membrane was markedly retracted and redder than normal.

Nose.—Nose showed inspissated secretion, tissues pale and soft, and the septum deviated to the right side.

Mouth.—The breath was offensive, the tongue heavily coated, the faucial pillars, tonsils and walls of the pharynx were red and swollen. There was also a suggestion of sagging of the right side of the mouth, which could not be accurately determined on account of intractability of the patient. Myringotomy of the right drum membrane was followed by a liberal flow of bloody serum and partial relief of pain. An iodoform gauze drain was placed in the external auditory canal and an acute mastoid operation suggested.

The next day, January 3, 1922, or the fifth of known ear involvement, though the patient *looked brighter, said she felt better*, the mouth, tonsils, pharynx and nose improved in appearance, and less tenderness below the tip of the right mastoid process, she was very restless and talked in a rambling manner all night. Distinct drooping of the right lower eyelid (lagophthalmus), together with sagging of the right corner of the mouth and inability to pucker her lips was noted.

OTOSCOPIC FINDINGS: *Right Ear*.—Increased general swelling of the walls and distinct sagging of the posterior wall of the osseous portion of the external auditory canal, almost blocking a view of the drum membrane.

Left Ear.—Findings same as on the previous day.

The patient was again advised that a mastoid operation was imperative, and she consented to go to the hospital for operation the following day, January 4, 1922, or the sixth day of the acute ear condition.

A roentgenograph taken by Dr. Henry Evans, of the right mastoid region and neck showed no evidence of a pus focus in the neck and a slightly suspicious shadow in the mastoid region posterior to the external auditory canal.

OPERATION: *Acute Mastoid*.—After elevating the soft tissues thoroughly, there was presented the high round and narrow type of mastoid process, ecchymotic in appearance. On cutting through the external cortical plate with the Alexander chisel, pus welled up under pressure from the body of the process which was of the diploetic type. All the small cells contained pus and granulations and all the spongy portions were red, irritable looking and soft. The entire outer cortical plate was removed, including the tip, followed by removal of all the cells, granulations and diseased spongy bony tissue from the tip upward and forward over the superior wall of the external auditory canal, as far as necrotic bone, etc., was found. Exploration was made of the tissues in the region under and below the tip, for a possible Bezold abscess and found normal. The lateral sinus, situated exceptionally near the mastoid antrum, was bared for observation; it presented the normal dark bluish-red color, and was soft and easily compressible. Unusually free bleeding from the bony tissues persisted throughout the entire operation. The wound was packed with iodoform gauze, one suture placed in the lower portion; plain sterile gauze inserted into the external auditory canal, and the entire region covered with the usual dressing of plain sterile gauze and a bandage.

During the twenty-four hours following the operation, there was restlessness, pain in the right temporal region, slight mental disturbance, passing of flatus, followed by mucus and a few drops of blood; urine scanty and dark in color, an analysis of which showed

a specific gravity of 1.012; otherwise normal. The temperature by mouth was 101, pulse 110, quality good, and respirations 20.

Cultures of pus taken from the external auditory canal at the time of the operation showed staphylococcus aureus and albus, and cultures from the blood were sterile.

During the next three days the patient seemed to improve; slept well, felt better, looked better, enjoyed her diet; temperature was normal and the respirations 20 to 24. The mastoid wound was dry except for a drop of pus in the lower end, below which there was some swelling, induration and tenderness. The external wall of the lateral sinus showed wave-like pulsations; the external auditory canal contained pus and its walls were swollen.

On the fifth day, though the patient was feeling good, the temperature went up to 100.2, the dressings of the mastoid wound were saturated; the wound bathed in a thin yellow pus, and the region below the tip had become less swollen and tender. Blood taken at this time for a Wassermann test was later reported negative.

During the following four days, the conditions in a general way, as they existed in rotation, were a decided subjective and objective improvement in the patient—a pale appearance of the wound and sigmoid sinus, the walls of the latter having also become rather rough and soft looking. Pus persisted in the wound, as did the swelling, induration and tenderness below the tip of the mastoid process. There was offensive pus in the ear, swelling of the walls of the external auditory canal and the drum membrane, together with a red, raw, beefy appearance of the latter. The facial paralysis was slightly improved. A second urine analysis was reported negative. The temperature ranged from 98 to 100. The pulse rate varied from 90 to 108, at times higher than the temperature: for example, temperature 99, pulse 108, respirations 20. The tension of the pulse being at times weakened. On the last of these four days, as a result of rather firm palpation of the region below the tip of the affected mastoid process in searching for a possible pus focus, there occurred a rupture of the external wall of the sigmoid sinus with a profuse hemorrhage, which was promptly overcome by an iodoform gauze pack against the wall of the sinus.

January 14, 1922. Tenth day after the acute mastoid oper-

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ation. At 6 A. M. there was a rise of temperature to 102.1, pulse 86, respirations 20, followed by a cold sensation. Five hours later she vomited three ounces of clear fluid, and still later had pain in the region of the operation. Beginning at 12 o'clock midnight (January 14, 1922) with a rise of temperature to 105, pulse 156, respirations 28; to noon, January 15, 1922 (twelve hours) the following symptoms prevailed: Temperature range from 102.2 ax. to 105.2. Pulse 120 to 156, respirations 20 to 28. Vomited five times, diet, mucus clear, and greenish fluid. Frontal headache after vomiting, nausea, dizzy when sitting up, cheeks red; drank large quantities of water every fifteen minutes, voided little urine, passed flatus; felt heavy, sleepy, and slept in short naps.

EXAMINATION: *Eyes*.—Pupils equal, normal size, react readily to light and accommodation. Spontaneous nystagmus only when looking to the extreme right. Superficial reflexes nil. Patellar reflex sluggish on left and absent on right side. No ankle clonus. Babinski negative and no rigidity of the cervical muscles.

Mouth, nose and throat negative.

OTOSCOPIC FINDINGS: Left ear, negative. Right ear, bulging of the superior and posterior walls of the external auditory canal; thin pus in same, and marked swelling of the drum membrane. Mastoid wound—gauze saturated with pus; granulations more pink in color.

A lumbar puncture was made between the third and fourth vertebrae and 10 c.c. of perfectly clear spinal fluid withdrawn, for diagnostic purposes.

Because of this decided change in the patient's condition, I had a conference with Dr. G. W. Mackenzie, in which it was decided that we study the case further before considering operative measures. The remedies, belladonna and echinacea, were discontinued, and chininum arsenicum given. A possible acidosis was thought of and enterochysis of sodium bicarbonate 1 ounce and sodium chloride 2 ounces to one quart of water was ordered to be given three times daily.

A second roentgenograph revealed nothing specially different from the one previously taken.

During the next 24 hours to noon January 16, 1922, the patient's condition continued to grow steadily worse. The temperature ranged from 101.3' to 105.2 ax. Pulse 120 to 140. Respira-

tions 24 to 28. There was frequent vomiting; vomited diet almost immediately after taken and on one occasion it was projectile in type. There was chill, sweat, restlessness, stupor, delirium, dizziness, little sleep, pain in the head, lumbar region, and below the left axillary region. The facial paralysis was more marked; pulse weak, involuntary and scanty urination, flatus and small watery defecation. The neurological finding, etc., being practically the same as found on the previous day.

Examination of the eye grounds by Drs. Mackenzie and Shemley showed the right eye to be normal, while the veins of the left one were slightly engorged—ratio about 2 to 4 instead of 2 to 3.

Having decided to operate we ligated the right internal jugular vein, using the skin fistula of Alexander; this done, the lateral sinus was opened in the hope of finding a thrombus; instead, there was a gush of dark blood which was quickly controlled by an iodoform gauze pack, and operative procedures discontinued. Immediately after the operation the temperature was 106, pulse imperceptible, respirations 46, profuse sweat and cold skin. Strychnia sulphate 1/60 and camphorated oil was used for stimulation. Other conditions following were inability to retain interocylsis, restlessness, very weak pulse, flatus, and seven ounces of highly colored urine were voided.

At the end of eleven hours the temperature had dropped to 97.2; pulse too weak to be counted, and respirations 18. Subsequently for about nine hours the temperature was 98.3 to 99, pulse 100 to 140 and weak, respirations 24. She had two watery stools, voided ten ounces of urine, slept and took nourishment; all reflexes seemed to be nearly normal except the superficial, which was nil, and the patient appeared to be considerably improved.

Laboratory reports by Dr. St. John: Cultures from pus showed staphylococci and meningococci (gram negative diplococci).

Cerebro-spinal fluid, cell count 20. Gram negative diplococci. Blood culture showed the presence of staphylococci.

A second lumbar puncture was made, withdrawing 15 c.c. of spinal fluid and 15 c.c. of Mulford's polyvalent antimeningococci serum introduced into the spinal canal.

Directly after this procedure and twenty-four hours after the last operation, the patient had another chill, followed by a rise of

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temperature to 104 ax.; pulse, fair volume, but very rapid; the count reported by the nurse was 180.

January 18, 1922, second day after the operation, the patient had again become manifestly worse; the temperature range was 101.3 to 104.3; pulse 120 to 160; respirations 22 to 32, quality fair. The skin was moist, dull and putty-like in appearance (subicteric). There was restlessness, delirium, sharp shooting pain in the right temporal region, of increased intensity and more constant than previously; twitching of the lower eyelid, cheek and lower lip on the left side; pain in the throat, worse on swallowing; mouth and throat dry; voided fifteen ounces of urine; slept little, and refused nourishment. The pupillary and other reflexes were all sluggish.

Redressed. The wound and external auditory canal were dry, free of odor, and the throat was negative.

Though the patient had revived somewhat during the first part of the next forty-eight hours, she soon lapsed into a less favorable condition. There was marked restlessness, very little sleep, pain in right side of the head, groaning, delirium, two rigors or chills, excessive thirst, two natural defecations and a large quantity of involuntary urine, and diet was taken with relish. The temperature range was from 100.2 to 105, pulse 120 to 140, improved in quality, and the respirations 24 to 36.

Redressed. Wounds and external auditory canal were dry.

A third lumbar puncture was made, withdrawing 20 c.c. of clear spinal fluid and replaced by 15 c.c. of Mulford's polyvalent antimeningococci serum. Notwithstanding that the patient felt stronger, was brighter in actions and appearance, after the serum injection there was a sudden drop of the temperature to 100.2 and a rapid rise in four hours to 105 ax. The spinal fluid was sent to Dr. St. John's Laboratory for a Wassermann test.

January 21, 1922. The temperature dropped from 105.3 to 100; then varied between 101 and 104.3 for forty-eight hours. The patient felt comfortable and stronger; enjoyed her food and asked for more; was drowsy, slept more; less thirst; micturition involuntary, and had two normal soft yellow defecations.

The pupillary reflexes were good; the superficial reflexes not present; the right patellar reflex almost absent and the left one normal; ankle clonus and Babinski negative.

Redressing. The entire gauze pack was carefully removed

from the mastoid wound, and while the sinus wall at the point of incision was not completely healed, there was no bleeding. A fresh pack of iodoform gauze was again placed in the wound and held by the usual external dressing of sterile gauze and bandage.

January 23, 1922. The temperature ranged between 103.2 and 104.2; pulse 116 to 130; respirations 24 to 32. The patient talked in her sleep, which was in short naps; complained of a sharp pain in the posterior region of the left thigh; voided 23 ounces, and had one liquid defecation.

Observations at redressing. The neck wound was dry and pale; the mastoid wound slightly wet; the granulations pale; the sigmoid sinus seemed distended, and a small amount of thick yellow pus was found in the external auditory canal.

The laboratory report on the second specimen of spinal fluid showed no growth in culture media after forty-eight hours' inoculation.

Pus. meningococci not found in smears.

January 24, 1922, found the patient worse; temperature 102.3 to 105; pulse 116 to 156; respirations 26 to 32; very little sleep; pain in left thigh, weaker, color bad, hands trembling, twitching of left lower eyelid and left lower lip, delirium, whistling, and clapping her hands, cough with frothy expectoration, involuntary micturation and defecation, and sensitive to pressure all over the body except the arms.

Reflexes: Eyes, pupils equal, normal size and react readily to light; horizontal nystagmus to right when looking to the right; patellar reflex, right side sluggish and left one about normal; ankle clonus slight in left foot; Babinski negative.

Laboratory report on spinal fluid Wasserman test:

Wassermann—weakly positive

Antigen I (cholesterinized) + +

Antigen II (alcoholic syphilitic liver) + +

Antigen III (acetone insoluble lipoids) — —

As a result of this report, daily mercurial inunctions of 30 grs. of blue mass were begun.

January 25, 1922, started with a temperature of 106.2 ax. and dropped to 102.4 during the day; pulse 120 to 160, and respirations 30 to 44. The symptoms and conditions were much the same as those immediately previous, with the following additional ones.

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Patient was dull, stupid, suspicious, and in an ugly mood. There was a general tremor of all the limbs and muscles; skin hot and dry, and refused to take nourishment. The reflex findings were the same as the previous day. The wounds were dry, pale, smooth, edges rounded, and had a glazed appearance. The lateral sinus was pale, pulsating and distended; the external auditory canal was dry and the drum membrane pale and thickened. A second mercurial inunction was given, together with an intravenous injection of neo-arsphenamine 0.6 in 5 c.c. of sterile distilled water.

January 26, 1922, found the patient notably worse; the temperature 103 to 105 ax.; pulse 132 to 160; weaker and irregular; slept little and as usual—in short naps. Took a liberal amount of nourishment; involuntary, offensive, green and yellow liquid defecations; had a mild convulsion with frothing at the mouth; increased tremor, stupor and delirium, yelling, markedly slow cerebration; picking at the nose and bed clothes, and perspiring about the head.

EXAMINATION: *Eyes*—Pupils equal, normal size, and react readily to light. Horizontal nystagmus to the right only when looking to the right. Superficial reflexes nil. Patellar reflex—right leg none, and left leg decreased. Ankle clonus on right side. Babinski negative. An examination of the chest made by Dr. Terry showed some congestion of the left lower lobe (probably hypostatic). The wounds were not redressed, because it was not necessary and because of the condition of the patient.

Phylacogen "Parke Davis" mixed infection, ten drops, was injected into the right arm, and another mercurial inunction given.

January 27, 1922. During the day the temperature gradually dropped from 104 at 2 A. M. to 103 at 2 P. M., when there was a sudden rise to 105.4 at 3 P. M. The pulse rate had been 120 to 132 until the rapid rise in temperature, when it went to 154 and was weak. The patient was very weak, trembling all over the body, and delirious part of the time. Rhus tox 30x was prescribed; stimulants, camphorated oil and spiritus frumenti were given and a liberal amount of nourishment was consumed.

EXAMINATION.—Reflexes, patellar absent on both sides; ankle clonus on right side; Babinski nil. *Eyes*—Pupils equal, small, react sluggishly, and there was a well marked conjunctival injection of the right eye.

Redressing. Both wounds were found dry, pale, smooth, and

glazed in appearance. The lateral sinus was distended and showed distinct pulsations. The external auditory canal was dry. At 4 P. M. the temperature began to drop; the patient became weaker, respirations more rapid—40 to 48. The skin was cold, and micturition involuntary. By 10 P. M. the temperature had dropped to 97.1; pulse 126; respirations 40. At 11.40 P. M. there was a chill that lasted 50 minutes, and at 12.45 A. M., January 28, 1922, the temperature had risen to 107 ax., pulse imperceptible. By this time the corneal injection of the right eye had materially increased; the eyelids were edematous, painful when touched, and marked protrusion (exophthalmos) of the right eyeball was noted. With the patient taking milk frequently, breathing became labored. At 5 A. M. the temperature went to 108.3 ax.; pulse was imperceptible; breathing more difficult, skin cold, heart exhausted, and coma, followed by death, with which there was recession of the right eyeball.

Intracranial lesions generally do not exist separately, there being usually one or more complications, causing a blending of the symptomatology in such a manner as to almost completely obscure the identity of an individual condition, therefore, placing tedious or serious obstacles in the way of a diagnosis at any stage of the trouble.

Sinus phlebitis and thrombosis can and does occur in the course of an acute otitis, forming an early complication that may go unnoticed for some time because of symptoms which are severe during pus retention (such as fever, cold sensation, pain and edema over the mastoid) and may easily hide those of sinus thrombosis. Again, cases of sinus thrombosis occur that run an atypical course with an irregular temperature curve, without chills and with mild mastoid symptoms; and still others occur in which all general manifestations are completely absent. Lutert, therefore, assumes that a fever continuing several days after the subsidence of the acute stage and accompanied by a free discharge of pus from the tympanic cavity, points to the diagnosis of sinus thrombosis in acute otitis.

The similarity of this case to the above observations is striking, for even though an acute mastoid operation in which great care was exercised to remove all unhealthy tissue in order to avoid further infection, there was a gradual recession of the temperature in twenty-four hours to 98.3, sudden accession to 100.1, with

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a rapid pulse; with the temperature then remaining between 98 and 99.1 for the next three days, and the patient feeling practically normal at times and not so good at others.

With these two latter symptoms continuing, the temperature began to assume the more intermittent character of the thrombosis and pyemia, varying from 98 to 100.2 for six days, when there occurred a rigor and a sudden rise of temperature to 105.2, indicating more frankly the presence of a thrombus together with pyemia.

Following closely upon the operative measures at this time and mentioned before, to determine the cause of this sudden change, the temperature dropped from 106 to 97.2 (probably due to collapse). After a chill and rise of the temperature to 104, the next day, there remained for five days a temperature curve and pulse rate rather typical of pyemia; at the end of this time, though the temperature remained high and the pulse rapid, the temperature had become more of the continuous type, the rigors much less marked, euphoria ceased, and stupor and delirium became more constant, suggesting complication with acute diffuse suppurative meningitis, the infection having probably spread from either the primary or a secondary source, rather than the result of metastasis, the usual course in pyemia, and of which there were no recognized evidences in any other part of the body.

The presence of a brain abscess had to be eliminated because there were no apparent symptoms suggestive of its existence. If on the tenth day after the mastoid operation, the rigor and high temperature had been due to an existing meningitis, it would have had to have been fairly well circumscribed at the point of infection, or the patient would not have lived so long. And as the operation on the lateral sinus had no influence upon the patient's condition, and as no thrombus was found, neither in the sinus nor the jugular bulb, it was presupposed there was a thrombosis of the right superior petrosal sinus. To substantiate this conclusion, there occurred later but three possible symptoms; namely, slight engorgement of veins in the left eye, pain in the right temporal region, and what seemed to be an epileptiform seizure, there being no evidence of the other symptoms found in this affection; for instance, enlargement of the temporal veins, thrombosis of the retinal veins, and trigeminal neuralgia; the latter being exceedingly prominent in a case reported recently by Dr. W. G. Semeley before the Philadelphia Laryngo-

logical Society. Finally, about twelve hours before the patient died, there appeared a slight swelling of the lids of the right eye and conjunctival injection. Later, just before death, the eye picture became still more characteristic of cavernous sinus thrombosis by increased conjunctival injection, oedema of the eye-lids and exophthalmos of the right or affected eye.

COMMENTS.—1. The facial paralysis was an early complication of the acute otitis and mastoiditis; no doubt due to extension of the inflammatory process to the nerve in the fallopian canal. A search made for necrotic bone or sequestra involving the canal wall, at the time of the mastoid operation did not disclose the presence of either.

2. Was the accidental rupture of the external wall of the lateral sinus in any way contributory to the first rigor and sudden great rise of temperature by permitting the entrance of infectious material into the blood stream? Personally, I felt that it probably was.

3. The first cerebro-spinal fluid withdrawn contained meningococci, indicating the presence of meningitis, while the low cell count was rather contradictory, as was the perfectly clear state of this and all subsequent specimens.

4. Absence of meningococci in the spinal fluid after the use of Mulford's polyvalent antimeningococci serum speaks for some results from its use.

5. Sharp pain in the left thigh was at first thought to be a possible indication of metastasis at that point; fortunately, however, it soon disappeared and nothing happened.

6. The positive spinal Wassermann again proved its sensitiveness and reliability over the blood Wassermann.

7. The peculiarly pale, dry, smooth and glazed appearance of the wounds during the latter days before death suggested an associated luetic condition.

8. Knowing that syphilis can produce symptoms simulating those of any other disease, and being peculiarly suspicious of its presence in this case, the negative blood Wassermann was a keen disappointment. Later the positive spinal Wassermann, while satisfying, was destined to be of no therapeutic value in this instance, for though anti-syphilitic treatment was begun immediately, it soon became evident that it was too late, as the patient was then moribund.

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9. Reflexes evidently did not correspond to the meningitis.

TREATMENT.—Surgical mastoidotomy, ligation of the jugular vein and opening of the lateral sinus.

REMEDIES: Belladonna, echinacea, chininum arsenicum and rhus tox.

RESTORATIVES: Strychnia sulphate, camphorated oil and brandy; alcohol rubs, sponge baths; enemata, enteroclysis; Mulford's polyvalent antimeningococci serum; Parke Davis, phylacogen, mixed infection; neo-arsphenamine; mercurial ointment, etc.

REFERENCES: Politzer, Alexander, Mackenzie, Ballinger.
1831 Chestnut Street.

DISCUSSION

DR. G. W. MACKENZIE: Concerning the case reported by Dr. Alexander, I am familiar with it in a way, and I happened to see the case with him. There are so many details that I have since forgotten, which make it difficult to discuss the case well. I recall having seen three cases of sinus thrombosis, two of them involving the cavernous sinus. I had a similar case in Camden at the same time, and also in Trenton, and I am slightly confused as to the details in each particular case.

I desire to emphasize what I think to be a very important combination of symptoms in conjunction with superior petrosal sinus thrombosis, and it was from this symptom complex observed in the first case that we were able to reason out Dr. Alexander's case and one other. The patient was brought into the West Jersey Hospital in a rather serious condition, secondary to chronic middle ear sup-puration, and with a characteristic pyemic temperature lasting over a period of several days, prior to examining him. Therefore, pyemic temperature is one symptom.

The second symptom was that the patient had had facial neuralgia lasting over several weeks. Third, he had a discharge that had a typical gangrenous odor, and we could get no other symptom excepting that the patient had lost weight, and looked profoundly sick. There was a discharge then, that had a necrotic odor, and a tri-facial neuralgia, very pronounced, and a typical pyemic temperature. After considerable thinking, I said, "There is only one location where we can put together these symptoms of tem-

perature, tri-facial neuralgia and this discharge which is suggestive of the bony necrosis, and that would be a sinus lying quite near to the gasserian ganglion." We operated, found a necrotic area in the antrum that led us inward and forward to the superior petrosal sinus which we suspected as being involved. After operation the patient did well for three or four days. The temperature dropped and everything appeared favorable. Nevertheless, I said to Dr. Shemeley, who was more intimately connected with the case, "That case is going wrong in spite of the fact that the patient has been running practically a normal temperature for four days; because I doubt that we have removed the entire thrombus to the cavernous and that will spread into the cavernous sinus."

Sure enough, after four days the symptoms recurred, and before death he developed all the symptoms of thrombophlebitis of the cavernous sinus, which I will not describe at the present time.

About the same time Dr. Alexander called me in to see his case, and the case was practically a parallel with the exception that the patient did not have a pronounced tri-facial neuralgia, but I was able to anticipate the same course of events in his case, as in the first case. Dr. Alexander has reported the case as one of cavernous sinus thrombosis. His case was obscured, too, by the fact that the patient had meningitis. The difficulty is that the cases are usually complicated.

I would like to ask Dr. Alexander whether, in his case, there was a thrombosis removed from the lateral sinus.

DR. ALEXANDER: No, there was not.

DR. MACKENZIE: I did not have an opportunity to look at Dr. Alexander's paper before coming here.

DR. CLAPP: I will take the time only to relate that I had a fatal case with the same trouble, and the symptoms that have been mentioned were very prominent, especially the odor of the breath, which was unusually offensive, and the odor of the discharge and the tri-facial neuralgia were extremely prominent. Another thing was that I had no involvement of the lateral sinus at all. We uncovered it completely and there was no thrombosis of the lateral sinus, and yet we had the typical symptoms of cavernous sinus as near as I could figure it out from the literature, which I found to be very meagre on that subject.

DR. SHEMELEY: I had an opportunity of studying this case

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bosis, as is always the case, practically we had no symptoms of this with Dr. Mackenzie and Dr. Alexander. Dr. Alexander had to omit a lot of his paper because of the lack of time. At the time we examined the fundus of the patient it was the right ear and there was no disturbance of the vessels of the fundus on the right side. However, there was an over-filling of the vessels on the opposite side. There was a disturbance of relationship between the arteries and veins.

Doctor Alexander called attention to the effect of syphilis and the simulation it may have to sinus thrombosis. I reported a case before the Philadelphia Laryngological Society last year, in which the patient who had been operated on for mastoiditis began to run a pyemic temperature. We could find nothing wrong with the wound that would point to any complication around the sinus. The Wassermann proved to be two plus, and the child was put on anti-syphilitic treatment and within ten hours it reduced the temperature to normal, the patient made a rapid recovery and he has been in better health than ever before. We examined the mother and found her negative, and the sister negative. On closer examination of the family history we found the paternal grandparent had died of a very peculiar liver condition, and it is very probable that the paternal grandparent had died of gumma of the liver, rather than a cirrhosis, which was the diagnosis rendered.

DR. ALEXANDER, closing: I fully realize the inconvenience and unsatisfying conditions associated with the writing of a paper of this length, in which all cannot be read. I knew that, but for publication's sake it had to be all there.

There were a number of things I wanted to bring out in this paper, particularly, and not the least important was the thorough blending of symptoms of about three conditions that existed at the same time in the inter-cranial cavity. For instance, thrombus, pyemia and diffuse meningitis. A condition of that kind certainly does cause you anxiety and a tremendous amount of difficulty when you attempt to handle it.

Now, in regard to the thrombosis in the lateral sinus there was not the slightest evidence, and no evidence of a tri-geminal neuralgia to suggest the superior petrosal involvement. The only suggestion we had of that was the epileptic form of the difficulty that the patient had, and as to the existence of cavernous sinus throm-

until the very last few hours, or say, for instance, about twelve hours before the patient died, and the first symptom began to present itself in the projection of the cornea, and just before death, the corneal projection became very much more marked and with it was edema of the eyelids, etc. I don't know whether this happens generally or whether it is something different, but anyway the exophthalmos became entirely obliterated by almost a complete recession of the eyeball after death.

PUBLIC VS. PHYSICIANS

PHYSICIANS are merely human beings with special training. Like other human beings they are very often guilty of selfishness and neglect. Too often the physician forgets to study the patient as well as the disease, falling into ruts out of which he is only jostled by the activities of mental healers and dietary faddists. It is an interesting commentary upon democratic processes that many public questions are settled not according to the well-thought-out opinion of the public at large, but according to the views or desires of those who shout most audibly. To accomplish legislative objects physicians, as a group, must be prepared to do a fair proportion of the shouting. In short, to improve the understanding between the layman and the physician, medical men should work for the improvement in the first place of medical and secondly of lay education in matters pertaining to the human body; they should attempt a more genuinely altruistic outlook in all their work upon patients, although, of course, protecting their own perfectly ethical interests; and they should be willing at all times to play a proper part as citizens for the promotion of the common good.—*Colorado Medicine.*

THROAT AND EAR SYMPTOMS IN RHEUMATIC CASES*

BY DOUGLAS MACFARLAN, M.D.

GOUTY and rheumatic diseases exhibit themselves in so many and so varied systemic manifestations that it has been difficult to classify them satisfactorily. Yet there is back of nearly every case, as it presents itself, an elusive symptomatic atmosphere that, though it cannot be defined very satisfactorily, nevertheless leads the observer, subconsciously, toward correct diagnosis. In mentioning ear and throat complications I will not refer them to particular types of these disease manifestations, for as a matter of fact, they seldom follow or appear in one given type more than another. I have had the fortune to see a great number of patients suffering from all varieties of rheumatic and gouty diatheses, suffering from the more general complaints of these diseases, and it is in these cases that I have been able to pick up the symptoms referable to the ear and the throat.

First of all it should be said that it has been our experience that throat and ear complications of gout and the various forms of rheumatism are rare.

As to *Aural Complications*—Omitting facial neuritis, which may or may not be due to an ear condition, we have as the aural complications of gout and rheumatism the following list, which I put down in what seems to me to be their relative frequency: Neuralgia about the ear, itching of the canal, eczemas and urticaria, gouty deposits in the cartilagenous concha and canal, alteration of cerumen, tinnitus, chronic ill-defined obstructive deafness, and acute exudative catarrh. I am conscious that a number of conditions have been omitted that will be found mentioned in the literature; thus Harvey¹ lays stress upon destructive changes and upon exfoliation of bone in the temporal and mastoid regions. I have only seen caries in one case with a rheumatic diathesis, and have never seen bony excrescences. S. O. Richey² mentions a progressive deafness in arthritis deformans. This he ascribes to nervous exhaustion and to aural atrophy of probably a neuritic origin in the spinal system. In numerous severe cases of arthritis deformans I

*Read at the Annual Meeting of the O., O. & L. Society, Chicago, June, 1922.

have never seen any ear symptoms. Alexander gives no place to rheumatic or gouty complications in his text book, nor does Sir Alexander Haig mention aural complication in his classic on uric acid. Haig merely notes the toxic effects of the salicylates, and the vertigo due to high blood pressure in collaemic states. (The latter is obviously bulbar as it is accompanied by occasional amnesias, migraines and is followed by polyurea.)

Taking up the list of symptoms that I have personally met, allow me to expand on each. Neuralgia about the ear—this is particularly important as the patient at times ascribes it solely to some ear trouble, so nearly and so intimately is the pain associated. Two things will give the clue to the cause, first, the previous history of rheumatic or neuritic symptoms; second, muscle soreness and stiffness in the neck. As to the previous history one usually finds evidences of the versatility of the diathesis; one year the patient may have had muscular rheumatism, at another time a definite neuritis, or still again a gouty type of arthritis with thickening, deposits and limitation of motion. The second consideration, muscle soreness in the leaders of the neck, has one feature that I have occasionally noticed and which I have not seen mentioned elsewhere. This is the presence of tender swellings, nodular in character, along the course of the muscles. It is an actual swelling of the muscle itself. Muscle spasticity exists to a greater or less degree and may be so pronounced as to produce a wry neck. I have had recently a case that had combined with this symptom a neuralgia progressing to a neuritis and a facial palsy of two months' duration. Here was a case in which the pain was so evidently in the ear that the patient was referred to me for examination of the ear. Yet the drum was normal, and the hearing and vestibular tests were normal.

Second in frequency and relatively common, is itching of the canal. It is usually a "tearing," unbearable itch that tempts the patient to scratch the canal with a match or hair pin, and when seen this case usually shows the evidence of the scratching. There may be the reflex cough with it. Examination and probe-palpation show that the area involved is the floor of the canal, and the sensitive spot is often sharply defined. The cause is obviously the deposit of crystals in the skin.

Next, chronic aural eczemas of all grades and all varieties, except the sebaceous type, can be met with in rheumatic cases. They

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may be branny, exfoliative, serous, papillary, bullous, haemorrhagic or pustular. The itching may or may not be severe but surely as the more serious grades are met, there is marked pain on manipulating the auricle. Urticaria of a true or false type may be seen, and it is mentioned here on account of its frequent association with a neuritic or rheumatic background. I have seen two severe cases this winter both with bullae in the canal but not on the drum. In each case pain was predominant and diagnosis was easy on account of the presence of blebs along the distribution of the great auricular nerve. The drums in each case were normal.

George W. Mackenzie⁸ emphasizes the fact that neuritis is apt to radiate its pain throughout the other nerves, the 5th, 7th, and 8th being a common combination, and the condition often being mistaken for middle ear suppuration. He warns against the great danger of incising the infected blebs on the drum in those herpetic cases appearing during influenzal epidemics. The bacteria, previously only on the dermal side of the drum, may be by perforation introduced into the middle ear. It is a good principle to look for neuritis when one sees blebs.

Alteration of cerumen giving a clean ear, free from wax, is so frequently noticed as to cause a little curiosity. The tendency toward sweating is well known with rheumatic individuals, and this perspiration has little of the oily or sebaceous in it. In the ear canal the wax certainly seems to be diminished.

Tinnitus has been met in more cases with rheumatic diathesis than can be accounted for on the grounds of coincidence. Haig explains it by an increased blood pressure due to the uric acid in the system. But this is evidently not the explanation, as we find cases with no tinnitus and high blood pressure, or find tinnitus with high or low blood pressure. Many theories are rational but they may not work out.

Gouty deposits in the cartilagenous or fibrous parts of the concha and canal have been seen by all aurists. The ear often escapes such deposits, even in severe cases. As to what seem to be calcarious deposits in or behind the drum, these are more often organized plastic exudates, the remaining evidence of some former catarrh. There is occasionally seen, however, minute creamy-white concretions in the drum that are unmistakably calcareous. They

may be oval or round, are apparently dense, seem to stand out elevated, and have a strong creamy color.

One case of gout had huge deposits in the usual locations, fingers and toes; these broke down and exuded a thick whitish paste. At the same time a large concretion deposited in the lobule and likewise broke down.

Chronic ill-defined obstructive deafness is seen quite often in the case with a rheumatic rather than a neuritic diathesis. This deafness comes on gradually, very gradually unless accelerated or complicated by acute catarrh. A number of causes may be advanced to explain the condition—progressive ankylosis of the ossicles, and ankylosis of the foot plate in the oval window, are the most plausible. Yet it is possible that changes in the two intrinsic muscles of the middle ear, or even a general degradation in tissue tone may affect the acoustic function. Obviously progressive obstructive deafness has so many causes, that in a long standing case it is difficult to determine the comparative culpability of each.

Acute serous or exudative catarrh can surely be ascribed at times to acute rheumatic attacks, particularly where there is a tendency to inflammatory reaction. It is often seen when local irritation in the canal has been severe, as in the eczemas or urticarias. More rarely a severe neuritis may provoke a serous exudative reaction in the middle ear. Sexton^{3 4} reports that serous otitis media is found in subjects exhibiting a well pronounced rheumatic or gouty diathesis. He discovers no particular incidence in reference to the age of his patients. He further notes cases of drum congestion, some deafness and a stuffiness in the ear; pain, however, being absent.⁵ I have never seen such acute congestive states that clearly ascribed to this diathesis.

The foregoing ear complications are, of course, only very occasional in rheumatic cases, yet they are mentioned to show the possibilities of their appearance. I have made a number of bad blunders in regarding these ear conditions as purely local.

The throat conditions exhibited by rheumatic patients are also not numerous, though they are more frequently met with than the ear conditions. There are mentioned by some authorities, rheumatic pharyngitis, and gouty sore throat, and most observers describe the two conditions separately. Rheumatic pharyngitis has features quite distinct from other forms of sore throat, and the

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one appearance that to my observation has been most constant is a "lateral" pharyngitis. This can be more fully described as a mucosal swelling on the lateral folds of the naso- and oro-pharynx. That the reaction is in the mucosa rather than in adenoid tissue is evident by its appearance when there is little pharyngeal adenoid present. This swelling is a mild inflammation or a subacute congestion and shows two distinct reddish bands on the lateral walls, the rest of the mucosa is usually less chronically congested, but, nevertheless, has a bluish red color that spreads out to the fauces and soft palate. Two other characteristic features of the condition are the absence of catarrhal secretion and the relatively disproportionate amount of pain. The patients complain of actual pain, not soreness nor rawness in the throat; and the swelling though not usually marked is usually noticed by them. Trousseau⁶ mentions the rapidity with which this painful affection appears and its equally sudden disappearance "as if by magic"—this has often been noted, and it may not depend altogether upon any local or general treatment. It should be remembered that the rheumatic sore throat may appear "out of a clear sky," unaccompanied by any general rheumatic symptoms at the time. The history of attack is, however, quite positive and an attack of rheumatism may shortly follow. Invariably the urine will be found high in acidity, running up to four or six times the normal, unless the patient has had some alkaline treatment.

To return to the sore throat, Fletcher Ingalls⁷ has mentioned that recurrences are common and may go on to a chronic form of sore throat. I have noticed this in several cases. One presumes that there is in these cases muscle spasm in the intrinsic muscles of the pharynx, the constrictors and the palatals; for, it is frequent to find their patients indifferent to carefully moulding their gutters. One case willfully so relaxed the palate as to give a voice of complete palate paralysis; this, she explained she did, so as to relieve the muscle spasm. Very occasionally the muscle soreness spreads to the more extrinsic muscles of the neck producing tenderness on palpation. I have never seen wry-neck develop from a purely rheumatic sore throat, yet it is, of course, on its own part a common manifestation of rheumatism.

So-called gouty sore throat is the final complication to be considered. Its existence is denied by many; others identify it by a

variety of descriptions, that taken conglomerately give a picture of intense hyperaemia even to the point of an oedema of the soft palate and uvula. As in the previous condition pain is a most common symptom. Though Morrell MacKenzie said that, "Gout is the last resort of destitute diagnosticians," he believed that gout could alone explain some obscure cases that he had met in the course of a long experience.⁹ Harrison Allen¹⁰ and Beverly Robinson¹¹ thought it rather frequent in its appearance.

It seems to me that the throat congestion seen in the gouty cases is identical with that in all the rheumatic types—congestion of the lateral folds of the pharynx spreading on to the fauces and soft palate. Again, pain is out of proportion to the symptoms. Certainly it is true that any of the nose or throat conditions can attack the rheumatic or gouty patient without having anything to do with these diatheses, yet the response to therapeutic measures alone will convince one that there is a true rheumatic or gouty sore throat. It is a condition remarkably responsive to treatment and will clear up long before the other more general symptoms disappear. Its repeated recurrence in subsequent attacks will help to confirm this belief.

In conclusion, I would like to make a plea for careful clinical observance of the mucosa of the tract we are studying. Though the era of mechanics that we are passing through has brought us much in methods of success, particularly toward correcting anatomical defects or variations, we have drifted far away from the older principles of careful observation. We are chiefly dealing with a highly organized, highly sensitive, living tissue reacting most sensitively to general conditions, showing changes in nutrition, responses to irritations, to atmospheric conditions of temperature and moisture, and to a thousand and one imponderable subtle influences. We may believe that we begin to deal in intangible generalities when we consider these effects; surely if we are not sufficiently observant we will miss seeing them altogether. Their very subtleness makes it difficult to value them; but the more we look for them the more often we will find them, and discover that their correction is a big factor toward results.

1805 Chestnut Street.

(1) London Med. Gaz., Oct., 1849.

(2) 9th Internat'l. Med. Cong., Wash., 1887.

(3) The Ear and Its Diseases, p. 247, N. Y., 1888.

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- (4) Syst. Dis. Ear, Nose and Throat, Burnett, i, 394-5
- (5) N. Y. Med. Rec., Nov., '83.
- (6) Syst. Dis. Ear, Nose and Throat, Burnett, i, 272.
- (7) Trans. Ill. State Med. Soc., 1888.
- (8) Personal Communication.
- (9) Gout in the Throat, J. of L. & R., 1888, 314.
- (10) Harrison Allen, on Gouty Sore Throat, Med. News, Phila., 1888, p. 663.
- (11) The Rheumatic and Gouty Diatheses as Manifested in Diseases of the Throat, N. Y. Med. Rec., Dec. 6, 1890, Beverly Robinson, M. Thorner, Chronic Throat Affections of Rheumatic Origin, J. A. M. A., May 10, 1890.

DISCUSSION

DR. ALFRED LEWY: Dr. Macfarlan opens up a subject upon which my knowledge is very vague, and upon which medical literature appears to be scant. We are accustomed to numerous articles on the etiological relationship of focal infections in the nose and throat to "rheumatism," (I am using this term in the generic sense); but Dr. Macfarlan opens our eyes to local ear and throat manifestations, associated with, or as the result of, systemic disease of the rheumatic type, or of gout. The importance of this lies in the fact that in these cases it is the general treatment, and not the local that is efficacious. This point is emphasized in an article by P. Watson Williams on this subject, the only article I remember reading which was at all explicit, until I read Dr. Macfarlan's paper. Williams describes a sore throat, very red in patches, dry and glazed, as characteristic of gout. Benign ulcers, and a type of sore throat which he admits his inability to describe adequately, he ascribes to "rheumatism," and strangely enough he states his belief that follicular tonsilitis is merely the local manifestation of a general disease of the rheumatic group, an opinion held for many years by our colleague Dr. W. M. Stearns, of Chicago.

Aural Complications.—I have seen deposits of urate of soda in the auricle, but never met with it in the canal, as described. Cutaneous manifestations of rheumatism are well known, but I have never succeeded in definitely recognizing them in this location, although I believe that many of them are general in origin. Herpes, bullae, etc., I am inclined to ascribe to infection of the associated ganglion cells. I reported a case two years ago to this society, associated with facial and vestibular paralysis. Dr. Mackenzie named it Hochbart's disease, but the first description I saw was by an American physician, Dr. Ramsay. Hemorrhagic bullae are most

frequently associated with influenza, and I do not hesitate to open them for the relief of pain. The calcareous deposits in the drum membrane, so far as I know, have no relation to gout, which causes deposits of sodium urate. General infections certainly can cause neuritis of the eighth nerve, and Politzer specifically ascribes some cases to rheumatism. In all painful affections about the ears or elsewhere, without evidence of local inflammation, I am accustomed to look for a focus of infection, whether associated with other evidence of rheumatism or not. In the various inflammatory affections of the middle ear I have not been keen enough to separate those of rheumatic origin from those of naso-pharyngeal extension.

Throat Complications—I am unable to separate the rheumatic sore throat from that which we usually ascribe to local infection, although I listened to the teachings of E. Fletcher Ingals, who made much of it. Pharyngitis lateralis I have found to be associated with naso-pharyngitis, the cause of which, however, I am convinced is frequently general rather than local, and often associated with digestive troubles. Dr. Macfarlan's description may help me here in making better discriminations.

Before we can make real progress in the study of these relationships, we must have a clearer idea of what constitutes rheumatism. We have arthritis due to various strains of streptococci, to tuberculosis, to gonorrhea, etc.; we had osteo-arthritis, arthritis deformans, and I believe that lately there has been described a form of polyarthritis due to protozoic infection, to say nothing of rheumatic visceral complications, several types of neuritis, myositis, etc. In gout we have a more definite clinical entity. It is only by a broad outlook, careful intelligent history-taking and accurate observation that we shall make progress along these lines, and I commend a re-reading of Dr. Macfarlan's concluding paragraph. I hope in closing he will read it to us again.

DR. C. E. TEETS: I would like to ask whether it is really correct to call all these cases rheumatic and gouty rheumatism? I use the word myself "rheumatic sore throat," but I think it is hardly correct, because many of these cases result from diseased tonsils, the pain starting in the tonsils shoots up in the ear. I think it would be better to call it an infectious sore throat rather than rheumatic or gouty rheumatic pain.

I found something that would cure almost every case, or re-

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lieve it, and that is a mixture of Salicylate of Soda from the true oil of wintergreen and Acetate of Potash. This has been a very valuable remedy with me and it is used by many doctors in treating rheumatism.

You can figure it out for yourself. To every grain of the Salicylate of Soda there is added one-twelfth of a grain of the Acetate of Potash and Qs. of oil of wintergreen to flavor it. I want to say that this helped me after I was treated for six months, so I had this formula made up into tablets. It does not affect the heart or the stomach.

Six of these tablets four times a day with Crataegus helped me out of a very serious trouble three years ago when they all thought I was going to pass away. I am still here and feeling better than I have been for twelve years.

The dose is 5 tablets every two hours. Each 1 grain.

DR. MACKENZIE: Just a word on rheumatic sore throat. No matter what the reason is, it is immaterial, but there is a reason—a condition exists that is popularly known as rheumatic sore throat. Doctor Macfarlan's answer was quite accurate. There are certain individuals who seem to be prone to it and it manifests itself with severe pain, the pains extend into the muscles of the neck and it is worse at night. The throat has a red, and more or less dry appearance, and the so-called rheumatic remedies generally work satisfactorily, but I have one remedy that I found to be exceptionally beneficial, for that particular kind of sore throat, and it is a very obstinate condition, guiacum works very satisfactorily on that kind of sore throat.

HETEROPHORIA: THE RELATION BETWEEN THE FAR AND NEAR TESTS *

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HETEROPHORIA is a large and complex subject and requires much study to understand all its various phases. Many questions are still undecided, and different opinions are advanced by those who are ranked as the highest authorities. This study covers only what might be termed some of the fundamentals, and while it may not be extensive enough for the figures to be considered as final, I think they are conclusive of the propositions advanced, and of sufficient importance to warrant its presentation.

What is the relation between the far and near tests in the normal and abnormal individual, with the present methods of testing?

In my opinion, and from the findings, to be detailed later, this relation is as follows:

There is normally a divergence in the near test over the far.

The divergence is slightly less in esophoria and increased in exophoria.

Experience gained from testing many cases had led me to believe that the large majority of patients show more divergence in accommodation, but as mental notes may not be accepted I tested 300 consecutive cases and tabulated the findings.

No individual showed orthophoria for both distance and near.

Orthophoria was present in 37 cases with an average exophoria in accommodation of 7.5 degrees.

Esophoria of 1 degree in 57 cases with an average exophoria in accommodation of 5.8 degrees.

Exophoria of 1 degree in 35 cases with an average exophoria in accommodation of 9.1 degrees.

To find what the result would be, the cases were grouped and those showing the same amount in the distant test were put in a class. The average of the near tests was then figured out, of each class, and is shown in the following tabulation:

*Read at the Annual Meeting of the O., O. & L. Society, Chicago, June, 1922.

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No. of Cases	Distant Test	Amount Degrees	Near Average		Test Amount	Degrees of Diverg.
			Eso	Ac.	Exo. Ac.	
1	Eso.	34	27			7
1	"	26	12			14
1	"	15			8	23
1	"	14	5			9
3	"	13	9			4
2	"	12			2	14
1	"	11	5			6
1	"	10	4			6
1	"	9	6			3
6	"	8	2.5			5.41
7	"	7	4			3
7	"	6			1.14	7.14
13	"	5			1.46	6.46
19	"	4			2.81	6.81
31	"	3			.90	3.88
27	"	2			6.44	8.37
57	"	1			5.89	6.87
37	Ortho.	0			7.56	7.56
35	Exo.	1			9.17	8.21
21	"	2			11.80	9.85
10	"	3			12.40	9.50
9	"	4			12.22	8.27
4	"	5			8.75	3.87*
2	"	7			23.50	16.75
1	"	11			28.	17.
1	"	18			27.	9.
1	"	30			21.	-9.

300

*Average changed by a few cases of high degree.

The evidence from this study is conclusive that there is a divergence in the near test over the far.

In the muscular balance of the eye there is only one condition that is accepted as normal by all, and that is orthophoria for distance. If orthophoria is not the normal position in accommodation, how much is the divergence? The near test shows too many variations for the selection of a certain number. Opinions will be formed by personal observation. From my own experience I would put it from 6 to 8 degrees, with orthophoria for distance.

A clearer conception is obtained of the relation between the far and near tests if it is considered under the term of divergence, rather than of exophoria and esophoria in accommodation. For example the following have the same amount of divergence:

Distant	Near	Divergence
Eso. 8	Eso. 1	7
Orth.	Exo. 7	7
Exo. 1	Exo. 8	7

In finding the average those cases that show a convergence are a minus element and have to be subtracted before dividing by the total number of cases.

An extensive search of the literature revealed very little on this point. The ordinary text-book, in describing the tests, would give the beginner the idea that, normally, both the far and near is orthophoria.

A few writers state that exophoria is normal in accommodation. Worth says, "It should be noted that, with orthophoria in distant vision, a little exophoria—perhaps 2 deg. or 3 deg.—appears to be the normal average condition in near vision" (*Squint*, 1921, Page 179). Swanzy, "2 deg. to 4 deg. is very common."—*Diseases of the Eye*, 1919, p. 555). May, "usually a slight exophoria (2 deg. to 3 deg.) for near" (*Diseases of the Eye*, 1917, p. 385). Thorington, "Testing the muscular condition at 33 cm. with the presbyopic near correction before the patient's eyes, there should be about 10 deg. of exophoria normally at this distance" (*Methods of Refraction*, 1916, p. 274). Duane, "Thus, in testing at 12" we expect to find with the phorometer an exophoria of 3 deg. to 6 deg." (*Motor Anomalies of the Eye*, 1897, p. 36).

To prove the second proposition, that in esophoria there is less divergence in accommodation, and in exophoria more, and find the average amount, will require the testing of many more cases. For this purpose a large number of individuals, with very

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little refractive error and under the presbyopic age, should be chosen.

No mention is made in the literature, as far as I can find, of any variation at the near point, in orthophoria, esophoria and exophoria for distance.

This series of 300 cases were consecutive and all ages. Those who had been operated for any muscular fault or had received training with prisms or other exercises, were excluded. The distant test was made with the Steven's phorometer, with a red glass before one eye and the Maddox rod before the other. The near amount was determined with the Risley prism for the high degrees.

If it is true that in orthophoria there is 6 to 8 degrees of exophoria in accommodation, and a little less divergence in esophoria and more exophoria, is it of any value? I think this can be answered in the affirmative.

The correct statement in the text-book would be of benefit to the student, and the beginner in ophthalmology would have a better understanding of his test.

I think the relation between the far and near tests gives valuable information in deciding the treatment of a case. This cannot be done on the distant test alone. A long discussion on treatment is beyond the intent of this paper, but a few examples might be cited: Take a patient with esophoria and greater amount of esophoria in accommodation and another with the same amount of esophoria in distance, but an abnormal amount of exophoria at the near point. Or a case of exophoria with esophoria in accommodation and one with a high degree of exophoria in the near. The decision for the proper measures to be taken in each case would be aided by a consideration of the relation between the distant and near conditions.

DISCUSSION

DR. FRED L. JOHNSON: Mr. President and gentlemen: Dr. Munson's paper brings out some very conclusive points in the matter of refraction and treatment of these cases. These points are usually ignored or passed over rather lightly by the average refractionists, and if this can be brought to our notice, I think the paper is well worth while. It proves that there is a relative, con-

vergent insufficiency. The logical application of this is going to benefit the patient very much, and I think there are three points that should be marked and remembered:

First: To detect this relative insufficiency, and

Second: To apply it to our choice of refractive correction, and

Third: To be able to tell whether or not a muscle training and fusion training is needed in conjunction.

In a case of hypermetropia, in connection with this convergence insufficiency, it stands to reason that a correction should be considerably less than full. In myopia, it should be crowded as near the full amount as the patient can wear with comfort. Another feature to remember is a careful adjustment of the pupillary distance.

I believe these cases should all be watched very carefully and checked up from time to time, to see what our results are, and if necessary, alter our refractive correction to improve those results.

Then, in case that the refractive correction properly applied does not take care of this insufficiency, we must fall back on muscle and fusion training.

DR. MUNCY: We owe a vote of thanks to Dr. Munson for taking the time to go over these cases. I always make tests in these cases, and I think many of us have realized that our early text-book knowledge, and our experience in our office in its relationship between the distant and near tests, and of the normal resistance and the exophoria with the patients should be with a view of comfort for the eyes.

What is to be done with symptomatology in cases of exophoria and esophoria, for your results in exercising a diffusion, to my mind depend on the relationship between the distant and near comparison that the doctor has brought out, and in this matter of the convergence, the exercising of the patient to the point of a slight degree of esophoria for distance is a satisfactory result. Where, if one stops at just a normal vision in distance rather than a little esophoria, the patient soon comes back with the difficulty.

THE CHAIRMAN: Are there any more discussions?

This subject is of very great interest to me. When I started out to do private practice in 1915, I made it a rule to take the muscle balance, both before and after refraction, and I have done that in

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every case, with very few exceptions, since. I have never taken the trouble to tabulate the results, but I have drawn certain conclusions.

Dr. Munson referred to a normal exophoria at 7 or 8 degrees. I determined that I liked to get the patient down to about 4 degrees to make them comfortable. I have always felt that 6 or 8 degrees for the individual doing very close work is probably more than they can tolerate with the amount of correction you would desire to place on that patient, considering each eye separately. It has been interesting to note, with patients returning for inspection after refraction, and you have a certain muscle balance, and so forth, that frequently changes surprisingly, you wonder why you get those erratic results. Another reason is, that if you have one or two degrees of esophoria at a distance, and a like degree of exophoria at near point, it is a facultative esophoria, and you will find you have an exophoria at the distance, when the patient is relaxed.

So there are all sorts of interesting things that come out. I think as a routine in taking the muscle construction before and after the refraction, if the patient is coming in with their own glasses, you will find what they get with their own refraction. I have found recently, three cases of divergent insufficiency which is rather rare. The patient had diplopia, and monocular vision over a short area—about 19 to 20 cubic centimeters, and the far point about 30. They would have diplopia beyond those two points, and all three of them had a lot of symptoms. The rotations were good, and showed some fault in the divergence because the esophoria was greater at the distance than at the near points. Two of those cases, I have been able to carry along with fusion exercises. They have not all cleaned up, but the divergent insufficiency has been very much improved and the patients are much more comfortable. On the other hand, if you have the convergent insufficiency and fusion is indicated, you have to work it the other way on the muscle training, and if they have strong fusion, simple convergent exercises or whatever you want to use is satisfactory. But you meet a lot of those cases, which suppress the image. You have to give them a red glass or something else before they are conscious of it. They think they are doing prism exercise, when they are not doing anything of the sort.

DR. MUNSON, closing: I did not mean, Dr. Rowland, that

6 to 8 should be the normal, when corrected, but it was only what I found in the tests. Now, with the corrections, it would probably show less, and might be down to four degrees then. I will also state that I am now working on a series of cases that are more near the normal, and I will report them if I find anything of benefit.

ABSTRACTS

RESULTS OF ACTIVE IMMUNIZATION WITH DIPHTHERIA TOXIN-ANTITOXIN IN THE PUBLIC SCHOOLS OF NEW YORK CITY (Manhattan and the Bronx).—Abraham Zingher, M.D., New York, *Journal A. M. A.*, Vol. 78, No. 25, June 24, 1922. After a detailed study of the subject from various angles, Doctor Zingher offers the following summary and conclusions:

"1. The immunity response to the same mixture of toxin-antitoxin varies greatly in different groups of children. A preliminary stimulation of the tissue cells in Schick-positive children caused by repeated exposure to infection with the diphtheria bacillus seems to enable the cells to give a better response to injections of toxin-antitoxin than in other children whose cells have not been previously stimulated by such exposure. This is the case even though these exposures have been slight and have not been apparent in the form of a perceptible increase of antitoxin in the circulating blood.

"2. After a first series of toxin-antitoxin injections, the immunity response to the second series did not follow the same *inverse ratio* noted between original susceptibility of the children in a school and the percentage of successfully immunized children in the same school.

"3. Three doses of toxin-antitoxin, each from 1 to 1.5 c.c. injected at intervals of one week, give much better immunity results than two doses of the same amount injected one week apart.

"4. A longer interval between the injections of toxin-antitoxin has the advantage in allowing the local reaction to disappear more completely before the next injection of toxin-antitoxin is given. There may also be a better antitoxin response when the injections are given two weeks apart.

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"5. At least six months should be allowed to elapse after the injections of toxin-antitoxin before the Schick retest is made to determine accurately the development of an active immunity.

"6. A second series of two or three injections of toxin-antitoxin should be given to those who have not become immune after the first series.

"7. There are a few children who fail to develop immunity after toxin-antitoxin injections even when they are given several series of injections.

"8. In the schools reported, from 70 to 93 per cent. of children were rendered immune after two series of toxin-antitoxin injections.

"9. There is practically no danger from anaphylaxis, either in repeating the injections of toxin-antitoxin or in giving toxin-antitoxin after a preliminary injection of antitoxin."—W. G. S., Jr.

INTRACRANIAL COMPLICATION OF MIDDLE EAR SUPPURATION.
—George W. Mackenzie, M.D., *Hahnemannian Monthly*, Vol. LVII, No. 8, August, 1922. The many complications of middle ear suppuration are enumerated. Attention is directed to the fact that the labyrinth, while not in the true sense an intracranial structure, frequently serves as a pathway for the spread of an infection from the middle ear to the cerebellum and the membranes covering it.

The writer considers that it is of the utmost importance that the general practitioner should know when a case of middle ear suppuration is behaving normally. Briefly, Doctor Mackenzie considers a normally behaving case of acute middle ear suppuration to be one in which pain ceases following the onset of aural discharge, the temperature should become normal and remain so, and the discharge should gradually diminish, stopping entirely at the end of ten to fourteen days.

W. G. S., Jr.

ABSTRACTS

VACCINIA OF THE EYELIDS BY HOMIOINOCULATION.—James Moores Ball, M.D., and Noxon Toomey, M.D., *Journal A. M. A.*, Vol. 78, No. 12. Eighty cases of vaccinia of the eyelids are all that have been recorded in literature. The case cited is of a five year old female child. The condition developed nine days after vaccination. The case recovered with practically no scarring.

W. G. S., Jr.

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
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SPECIALISTS IN THE MANUFACTURE OF
ARTIFICIAL EYES

AFTER PLASTIC, GOLD BALL OR
FAT IMPLANTATION OPERATIONS

108 E. 12th Street
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PHILADELPHIA

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Editorial

IT has recently come to the attention of the Editor that our worthy fellow member and past president of the O., O. & L. Society, Dr. Royal S. Copeland, is the Democratic candidate for the United States Senate from the State of New York.

The medical fraternity has for a long time recognized the ability of Dr. Copeland as a forceful orator, a diligent worker and an able organizer. His valuable services to the medical profession and the laity are well known, particularly his service to New York City as its Health Officer. His originality of thought and sincerity of purpose is comparable with that of Col. Roosevelt, in that it will not allow him to be tied down to ancient precedents when action is needed. He is a Progressive in the truest sense of the word. His election ought to prove a boon to the common people and the medical profession. He is not the least bit narrow, so that Republicans as well as Democrats could safely support him for election. It is hoped that every medical man in New York State will cast his vote for Royal S. Copeland for United States Senator, and go a step further and induce others to do likewise.

GEO. W. MACKENZIE, *Editor.*

SOUTHERN MEETING, KNOXVILLE, TENN.

NOVEMBER 15, 16, 17, 1922

Program of O., O. & L. Bureau, Thursday Afternoon, November 16th:

1. Report of a Second Case of Plastic Labyrinthitis, with Interesting Findings.
Dr. William G. Shemeley, Philadelphia, Pa.
2. The Use of Solutions in the Eye.
Dr. C. A. Harkness, Chicago, Ill.
3. The Doctor and the Army.
Dr. M. B. Coffman, Richmond, Va.
4. Report of the Mackenzie Summer Course in Europe.
Dr. J. J. McDermott, St. Joseph, Mich.
Dr. G. D. Arndt, Mt. Vernon, O.
Dr. W. H. Williams, Middletown, O.
Dr. Willard Thompson, Dixon, Ill.
Discussion by Dr. G. W. Mackenzie.
5. Autotherapy in Hay Fever.
Dr. W. M. Muncy, Providence, R. I.
6. Septal Perforation.
Dr. W. H. Williams, Middletown, O.

The Southern meeting has been, for the last four or five years, a semi-official Winter meeting of the O., O. & L. Society, when the officers of the Society, including the Bureau Chairmen, get together and arrange for the Annual Meeting. It is hoped that everyone who can find it convenient will attend, and participate in the program, and also the discussion of O., O. & L. Society affairs.

ALVA SOWERS, M.D.

PRIVATE POST-GRADUATE INSTRUCTIONS

THE Editor will give clinical courses in Otology to a limited number of men desiring it. Especial attention will be given to the subject of tests for the hearing and the vestibular functions. The course will cover 15 hours, to be completed in one week. Courses will begin November 6th, 14th, 21st and 28th. A longer course can be arranged for those who may desire it.

PROCEEDINGS OF THE BUREAU OF OPHTHALMOLOGY,
OTOLOGY & LARYNGOLOGY, EASTERN HOM-
OEOPATHIC MEDICAL ASSOCIATION,
TRENTON, N. J., OCT. 27, 1922

J. V. F. CLAY, M.D., PHILADELPHIA, PA.

FIRST PAPER—Dr. Rumsey's paper on "Tuberculosis of the Eye." Dr. Rumsey stated that his experience in a children's institution handling these chronic ocular lesions has shown the existence of hereditary lues and tuberculosis in the same individual. If cases that show a positive Wassermann do not respond to anti-luetic treatment the von Pirquet has added valuable information in directing the therapeutics.

DR. G. M. MACKENZIE: Tuberculosis of the eyes is rare, while syphilis is common and, therefore, tuberculosis is very likely to be overlooked, and it is possible for the two diseases to co-exist. Years ago Dr. C. M. Thomas called attention to the occurrence of ocular lesions following the suppression of skin lesions, especially eczema of the face. Fuchs comments upon the same thing. When you suppress an eczema in the face of a child they are very liable to develop a scrofulous keratitis or a phlyctenular keratitis.

Dr. H. B. Ware reported a case of interstitial keratitis, with a negative Wassermann, which he treated by using a spray for the nose and the use of hydrastis, in the tincture and merc.-corr. internally. Upon this treatment the patient improved very much, leaving a nebula of the right eye. Several months later there was a recurrence. The patient was placed on the same treatment as previously described, but became worse. Wassermann tests were made and were positive. Salvarsan injections were given, but the patient became progressively worse. Dr. de Schweinitz, of Philadelphia, confirmed the diagnosis, and recommended continuing of the Salvarsan treatment, but in spite of this the child became worse. Dr. Ware then stopped all anti-syphilitic treatment and gave the boy sulphur and resumed the treatment of spraying the nose and the use of a mydriatic as before. In a week's time the improvement was marked. The boy went on to a complete recovery with, of course, the presence of the nebula in the right eye. Dr. Mackenzie called at-

tention to the effect of the sulphur baths in Sulphur Springs upon syphilitics, also the effect of sulphur in offsetting the ill effects of mercury.

Dr. Rumsey, closing the discussion, stated that he was accustomed to making the Wassermann in every case, but he felt that too frequently the tubercular test was omitted and thereby tuberculosis overlooked.

Discussion of Dr. Clay's paper upon, "Some Facts and Fallacies Concerning the Effects in the Removal of Tonsils." Dr. Shemeley emphasized the necessity for proper diagnosis before removal of tonsils is undertaken. He also called attention to the recurrence of symptoms after the removal of tonsils and adenoids. In certain cases which are probably due to endocrine disturbances, he urged a more intimate study of this subject in connection with hypertrophied tonsils and adenoids. Dr. Shemeley also spoke of the effect of diseased tonsils in the production of ocular lesions.

Dr. Mackenzie cited a case of recurrent iritis which, after very careful clinical investigation, was considered of focal origin with the focus in the tonsils. The patient subsequently developed cholecystitis. Dr. Mackenzie wished to emphasize that this is a result of focal infection occurring late.

Dr. Tyler spoke from the anaesthetist's standpoint. This is a major operation and advises continuous and not intermittent anaesthesia. The laryngeal reflex should never be lost. Chloroform is absolutely contra-indicated. He suggests morphia in adult cases preliminary to the induction of anaesthesia and he takes exception to Dr. Jackson's statement that that abolishes laryngeal reflex.

Dr. Alexander called attention to the necessity for careful consideration of the septal deviation in children and urges the correction of these in connection with tonsils and adenoid work.

Dr. Garrison stated that he has learned to be very conservative in the removal of tonsils, preferring to remove the adenoids in a large majority of cases. He always uses chloroform.

Dr. Warner asked concerning the indications for removal of tonsils.

Dr. Savoy called attention to this very marked influence upon the nervous system in the removal of tonsils under local anaesthesia. He states that he has seen some very unfavorable results from this procedure.

EDITORIAL

Dr. Clay closing the discussion: The manner of endocrinology is a subject that is very interesting, but up to this time has not produced very much in a practical way by attempting to supply the apparently waning internal secretion. We are rather impressed that careful study from an endocrine standpoint simply furnishes a better basis for a homœopathic prescription. Dr. Clay was pleased to have Dr. Mackenzie refer to the biliary cases. Dr. Clay eliminated this from his paper because of the fact that he has seen but two well defined cases traceable to the tonsil.

In the matter of anaesthesia Dr. Clay spoke enthusiastically of the nitrous oxide anaesthesia in the recumbent position. He did not agree with Dr. Garrison that the removal of adenoids was sufficient and cited the study of a number of children in an orphans' home which Dr. Palen and he followed for a number of years. In most of these cases where only the adenoids were removed it was necessary to finally remove the tonsils. Removal of tonsils under local anaesthesia is only done at the patient's request, or when general anaesthesia is distinctly contraindicated. Dr. Clay was of the opinion that careful selection and study of the cases before operation, clean, sharp, surgical operative technique, hemostasis by means of recognized methods of control and the elimination of meddlesome post-operative treatment give the best end results.

In answer to Dr. Warner as to indications for removal of tonsils, Dr. Clay felt that, aside from the cases of distinct enlargement where obstruction to breathing, swallowing and tubal function and the interference of articulation is present, the matter of decision of the removal of the tonsil was arrived at by a process of elimination frequently calling for intimate consultation of the internist, roentgenologist and bacteriologist.

2102 Chestnut Street.

EMINENT EUROPEAN TEACHERS AND THEIR VISITS
TO AMERICA

EMINENT European Teachers have made visits every now and then to America long before the War and since, and will probably continue to make them in the future. Some have come as invited guests to attend Medical Society Meetings, to present papers on subjects about which they are an accepted authority, as in the cases of Neumann the ear surgeon, Colonel Smith the eye surgeon, Colonel Elliott the eye surgeon and glaucoma expert, and most recently Robert Barany, who won the World's Prize in medicine because of his productive clinical researches into the subject of pathology of the inner ear. The total number of eminent foreign authorities who have visited America during the last twenty years amount approximately to one per year. The eminence of these authorities varies in magnitude. Barany, the most recent, may be considered as one of the first magnitude. Since the Nobel Prize in medicine that he won was the result of distinguished work in the field of otology, we of the specialty have reason to feel gratified at his visit to America. May his visit be mutually profitable to him and the American otologists. May it stimulate the American Otolologists to better efforts. The length of Professor Barany's visit to America will probably depend upon the popularity of his lecture courses, which he contemplates giving. He is at present at Minneapolis, where he was first called by the American Academy of Ophthalmology and Otology, to present a paper and to discuss one presented by the Editor, on the subject of nystagmus. Barany's paper and the discussion which followed, will appear in the proceedings of the Academy as will also the paper by the Editor and Barany's discussion of the same.

The popularity of courses given by foreigners in America depends largely upon the reputation of the teacher and his personality. For instance, Professor Fuchs, of Vienna, who visited America recently, remained with us for six months or more. The month that he stayed in Philadelphia will long be remembered. He read a course of thirty hours on the subject of Pathology of the Eye, using the micro-projection apparatus. The fifty ophthalmologists who spent fifty dollars each for the course felt that it was well

worth every cent of the amount expended. Professor Fuchs left an admirable impression behind him. He was no less appreciated in other American cities. It is to be hoped that Professor Barany will be just as successful. He is quite as well known in the field of otology as Fuchs is in ophthalmology.

Fuchs holds two advantages over Barany: the one is in the fact that Fuchs possesses an exceptional collection of microscopic slides covering the entire field of ophthalmologic pathology, which he can project on a screen, and talk about as familiarly as one can of his own creations. The other is that Fuchs is a veteran lecturer possessing the experience of maturer years.

Barany, on the other hand, is at the pinnacle of his fame, which was so recently recognized by the Swedish Government.

G. W. M.

CURE-ALLS FOR DEAFNESS

THE title of this Editorial was suggested recently by a patient asking if we had heard of Dr. So-and-So's wonderful cure for deafness? How many times has this same thing happened to other aurists? It is almost impossible today to find a magazine which does not advertise some wonderful cure for deafness or some wonderful aid to hearing. These "cure-alls" are legion. Within the past six months one of the special journals printed an article by an aurist, in which he said, in effect, that catarrhal deafness was the bane of otological practice. Such statements by professional men, and the advertised "cure-alls," of necessity lead the lay public to the erroneous belief that when one has become deaf, or when one has lost materially his ability to hear, all hope has gone and there is nothing left for him to do but to learn the sign language or lip reading. This is to be regretted. Those who advertise in the current press "cure-alls" for hearing are commonly lay persons who have some instrument or application which has benefited a few, and which they put forth, perhaps sincerely, with the idea of helping some, but principally for commercial purposes. Some are frankly fakes, and these fortunately are in the minority; but it is to be deplored when a professional man, either

through ignorance of his subject or through avarice, permits himself to give to his patients an impression that he has a "cure-all" or approximately a "cure-all" for deafness. The layman may be excused for attempting to bunco another layman, but a professional man should have a higher standard. From time immemorial the lay person has had a "cure-all" for every ailment, and little wonder is it that certain of them have a "cure-all" for deafness, but the doctor should always realize that each individual is a law unto himself and that deafness may be due to many causes, some of them localized in the ear, but many of them remote, depending upon a constitutional disturbance elsewhere in the economy.

The study of disease implies first a knowledge of the anatomy and physiology of the parts involved, plus a knowledge of the symptomatology and pathology of the diseases involving those parts. Deafness is divided roughly into two classes: one class involving the middle ear, and known as catarrhal deafness, and the other involving the inner ear or labyrinth, and known as nerve deafness. There is a third classification in which a combination of the two above-mentioned classes may co-exist, known as a mixed type. In addition to these there is that little known disease which produces progressive and marked deafness called otosclerosis.

In the treatment of any disease an accurate diagnosis is an essential preliminary, for unless an accurate diagnosis is made and the type of deafness determined, together with its causes, any treatment is guesswork, and guesswork is inexcusable. When one realizes that in Great Britain the study of diseases of the ear, nose and throat has been compulsory only since 1921, and that the entire course is covered in approximately 48 lecture hours, and that the average medical school in this country does very little better, it is no wonder that the general practitioner and his patients believe that otology is a mysterious subject and very little known. Those of us, however, who have gone deeply into the subject, know definitely and realize the magnitude and far-reaching effect upon the economy of diseases of the ear, and vice versa.

Recalling the complicated anatomy of the ear and its communications with other vital organs, it is beyond our comprehension how anyone who knows his subject can offer to the public a "cure-all" for deafness. We must conclude when one does so that either he is not fully cognizant of his subject or that he wilfully

deceives. Every patient suffering from deafness who comes into the office of an otologist for relief is entitled to a complete and exhaustive examination, with the object of determining, if possible, the character of deafness from which he suffers, its cause, and whether this cause can be removed, because unless the cause is removed no treatment can be permanently beneficial. It may be said that while the ultimate pathology of deafness may be found within the ear, its primary causes are never found there. It is obvious, therefore, that any treatment directed exclusively to the ear is insufficient.

It is inadvisable to go more specifically into details with regard to the various "cure-alls," for to take those advanced by the laymen as advertised in the public press would serve only to advertise them further, and to discuss in detail the various cures advocated by members of the profession would necessitate a review of the entire subject of otology. Our final word is to urge the public to select for the treatment of deafness, otologists of repute, who are conscientious, who are careful diagnosticians and who have no "cure-alls," and to avoid the use of all "cure-alls" for deafness as advertised in the public press.

L. E. H.

POST-DIPHTHERITIC PARALYSIS AND ANTITOXIN

CASES have recently been reported showing paralysis following diphtheria, "in spite of antitoxin treatment." Such occurrences are not singular and are to be expected. Antitoxin is not to be considered less valuable, but is not to be depended upon to invariably guard against such paralysis. Antitoxin can only counteract the toxins free in the blood stream and is valueless to undo the harm of toxins already combined with the nerve cell. Many cases do not receive their antitoxin until a few days after the onset of the disease, and the damage by this time has been accomplished. Protection should be undertaken before the time of possible positive diagnosis.

The report on the culture should not be awaited in the case showing a high constitutional reaction with sore throat or nasal catarrh. Singularly this applies more to infants under two years

of age than it does to those older, for the constitutional reaction to antitoxin is usually milder in infants than in adults or older children. The Schick test is of great value in early diagnosis as well as in the determination of immunity in "contacts," yet the possibilities for error in technique, the pseudo-reactions, and the period of reaction time (twelve to twenty-four hours) make it inadvisable to wait for the finding.

Further than this, Ker (Infectious Diseases, 1920), has shown that the mortality from diphtheria is markedly reduced by antitoxin administration on the first, second and third days. No statistics are available as to the elimination of post-diphtheritic paralysis by early antitoxin treatment, but it is reasonable to assume that it is advisable to counteract the toxins in the blood *at the earliest moment*. As Park states the time of absorption of subcutaneously injected antitoxin to be twenty-four hours, a gradual process in what may be an acute case, it is readily seen that the toxins may have had sufficient time to affect the nerve cells, before antitoxin has been given.

Intramuscularly, antitoxin is absorbed in twelve hours; intravenously, its effects take place in four hours. The latter method, were it not for the difficulty in administering to children, should be the choice. Above all, antitoxin should be used early.

D. M.

LOCATIONS WANTED FOR EYE, EAR, NOSE AND THROAT SPECIALISTS

THE Editor has been appealed to from time to time by young men fresh from post-graduate courses for suggestions as to where they should go to practice. In quite a few instances he has been able to bring together the older, busy men and the younger, yet unsettled specialist. In all such instances where he has been successful in finding for the older man an assistant and for the younger man a location, the results have proven very satisfactory to both parties.

The future policy of the Editor will be to try to bring together these parties through the pages of the JOURNAL and by personal correspondence.

EDITORIAL

At the present time there is a favorable opportunity for the right young man to associate himself with a successful Eye, Ear, Nose and Throat Specialist with a large practice.

If the aspirant will be kind enough to communicate with the Editor, setting forth his qualifications, he will do his best to place the young man.

G. W. M.

OPPORTUNITY FOR AN ASPIRANT.—Vacancy on the Interne Staff of the New York Ophthalmic Hospital. Communicate with Dr. Charles C. Boyle, 40 East 41st Street, New York, N. Y.

MODERN LABYRINTHOLOGY. — Professor Robert Barany; *Laryngoscope*, Vol. xxi, No. 7, July, 1921. *Arrest of Nystagmus by Closing the Eyes*. Here the writer advances the theory that "if a rotary or caloric vestibular nystagmus of selected character and strength has been determined, such nystagmus can be made to disappear by intense closure of the eyelids." In corroboration of this fact he cites the result of the research of his former assistant, Dr. Vilhelm Nasiell, in 1919, also the report of a Czechic "Arbeit" by Dr. A. Pekelsky. In the attempt to explain this phenomena Professor Barany believes that one must consider more closely Bell's phenomena, on the one hand, (eyes are rolled upward during intense closure of the lids) and the observation of arrested nystagmus on the other. The conclusion is reached "that in closure of the lids, all eye muscles are intensely innervated and the more intense the innervation and the arrest of the vestibular nystagmus depends on the simultaneous innervation of agonistic and antagonistic innervation and the consequent blocking of these opposing muscles." This arrest is considered as a purely peripheral, mechanical check.

W. G. S., Jr.

REPORT OF THE THIRTY-FIFTH ANNUAL SESSION
OF THE AMERICAN HOMOEOPATHIC, OPHTHAL-
MOLOGICAL AND LARYNGOLOGICAL
SOCIETY

HELD AT THE DRAKE HOTEL, AT CHICAGO, ILL., JUNE 18TH TO
22ND, 1922.

DR. J. R. McCLEARY, *President and Chairman*

DR. NEIL BENTLEY, *Secretary*

The Monday session of the Thirty-Fifth Annual Convention of the Society was called to order by the President and Chairman, Dr. J. R. McCleary, at 9.30 A. M. Chairman McCleary, after calling the meeting to order, announced that there would be a slight change in the arrangement of the program, especially with regard to the paper of Dr. Harry S. Gradle, that portion of the morning program to be taken up in the afternoon, owing to necessity of arranging for the stereopticon.

(On motion made by Dr. Mackenzie, the program as submitted and printed was adopted with the exception of the order of Dr. Gradle's paper on "Demonstration of the Gullstrand Slit Lamp," and Dr. Wm. G. Shemeley's paper on "Neurolabyrinthitis of Drug Origin," No. 32 on the program. The motion was seconded by Dr. Alexander and carried.)

THE CHAIRMAN: On the committees, Dr. Miller will act as Chairman of the Attendance Committee. The Nomination Committee stands without appointment as a regular committee and Doctor Haseltine will be on the Press Committee, and as he has been doing excellent work on that committee right along, he will continue in the same capacity.

DR. HASELTINE: Mr. Chairman, the Institute, in connection with the Society this year, has adopted a somewhat different plan in regard to publicity than heretofore, and we want to have you extend the working of it and help us. We have a paid professional publicity man assigned to us from the Chicago Daily News. The Daily News is our friend, and the owner of the News is a strong supporter of our school. This man, who is very expert in his line, has been working for five or six weeks in preparation of this program, and has given out to the Daily Press and Associated Press, and the local papers those announcements and things of that sort

which have been very good, and we have had more advance publicity than we usually get. Now he is going to be here all week, down stairs, with a stenographer, and Dr. Stevenson or myself will plan to be there practically all the time. Now we want each of you to constitute yourselves members of this committee, and give him anything you may have yourself, or introduce your friends and have them bring in anything that brings up a subject for discussion; or if he does anything, or if he has an automobile mixup, or gets married or divorced, or runs away with anybody, let us have the dope with pictures, not merely for local papers, but for the Associated Press. This publicity man has a very fine sense for news and he is in a position to get a hearing and the editors all over the country will pay attention to anything he says. So work it out and boost it all you can.

THE CHAIRMAN: The next thing in line is the report of the officers, and we will first hear from the Secretary, Dr. Neil Bentley.

The Secretary read his report, and on motion by Dr. Metzger, duly seconded by Dr. Alexander, the report of the Secretary as read was adopted.

SECRETARY'S REPORT

Mr. President and Fellow Members:

I wish to make my fourth annual report as secretary for the year 1921-22.

There was a preliminary meeting held in Cincinnati, November 17, 1921. We were guests of President McCleary at luncheon; twenty-two members and guests being present. Plans were made for the Chicago meeting. Dr. Haseltine, chairman of the local committee in Chicago, reported that very satisfactory arrangements had been completed to hold the meeting at the Drake Hotel.

Following action taken at Washington, the secretary asked for subscriptions for the JOURNAL to relieve the financial burden upon the Editor. A number of the men present subscribed for copies.

Another meeting of a number of the men was held in Detroit, November 27th, at which time plans were perfected for the Chicago meeting.

Following this meeting, a special letter was sent to all members asking them to take some active part in this year's pro-

THIRTY-FIFTH ANNUAL SESSION

gram, and asking them to notify the bureau chairmen and the secretary. This letter was in addition to the energetic and conscientious work of all of the bureau chairmen.

There was an additional meeting at New York, where further plans for the meeting were completed.

During the year the constitution and by-laws were brought up-to-date and published, and the membership list was completed and published.

In the February issue of the JOURNAL a complete list of the officers since 1878 was published.

Each issue of the JOURNAL has contained notices advertising our June meeting.

January 11, 1922, a special letter was sent to all the members asking for additional subscriptions to the JOURNAL. A total of 76 was secured.

The program was published in the May issue of our JOURNAL and in the *Institute Journal*. Some late changes were made which were included in the final program as printed in the June number. This was issued early in June, so that every member has had opportunity to study it.

A special letter with application blanks was mailed to all members, stressing the need of lining up all first-class Homœopathic O., O. & L. Specialists. We want all such men members of our Society. An Honor Roll was announced for all who secured new members. This was published in June. There are some additions to this list. The completed list of men who have secured new members is as follows:

Dr. Burton Haseltine

Dr. Neil Bentley

Dr. Dean W. Myers

Dr. A. M. Maldeis

Dr. H. R. Wynn

Dr. Theo. E. Miller

Dr. E. S. Hallinger

Dr. L. E. Hetrick

Dr. George W. Mackenzie

Dr. S. J. Cattley

Dr. Joseph Clay

I wish especially to thank Dr. McCleary and Dr. Mackenzie and the Bureau Chairmen for their splendid help. Dr. Haseltine has handled his part of the work with his accustomed ability. The completed program is before you.

The following expense account is submitted:

THIRTY-FIFTH ANNUAL SESSION

EXPENSE ACCOUNT

1921-22

1921

June 23—Express package	\$.55
Sept. 6—Double postcards	10.50
Oct. 18—Stamps	10.03
Oct. 21—Letterheads	30.00
Nov. 7—Letters for Cincinnati Meeting	3.50
Nov. 7—Cards	4.90
Dec. 9—Harper Printing Co., Constitution and By-Laws..	7.73
Dec. 16—Stamps	10.03
Dec. 16—Letters for Cincinnati Meeting	1.75

1922

Jan. 26—Membership letter	3.74
Jan. 10—Subscription letter	2.75
Feb. 16—Letter heads	19.00
Feb. 3—Stamps	10.03
Feb. 23—Membership lists	10.39
April 11—Telegram Cincinnati .....	.46
April 13—Telegram Chicago .....	.61
May 24—Telegram New York .....	.53
May 26—Telegram Philadelphia .....	.53
May 26—Telegram New York .....	.53
May 29—Telegram Chicago .....	.41
May 29—Telegram Chicago .....	.46
June 1—Telegram Chicago .....	.41
June 1—Telegram Philadelphia .....	.62
June 1—Telegram Philadelphia	1.21
June 13—Telegram Philadelphia .....	.53
June 13—Telegram Chicago .....	.47
May 31—Stamps .....	.37
May 31—Stenographer	20.00
June —Programs	43.37
June 17—Registry Book .....	.50

Total\$195.91

Respectfully submitted,

NEIL BENTLEY, *Secretary.*

THIRTY-FIFTH ANNUAL SESSION

THE CHAIRMAN: The next report will be the report of our treasurer, Dr. Wm. M. Muncy.

TREASURER'S REPORT Year Ending June, 1922

Receipts

Balance on hand June, 1921	\$518.56
Dues, Initiation Fees and Journal Subscriptions	902.00
	—————\$1,420.56

Expenditures

Lulu Gay, Stenographer of Meeting	\$118.00
Geo. W. Mackenzie, Expenses of President ...	37.02
Neil Bentley, Expenses of Secretary	127.55
Wm. M. Muncy, Expenses of Treasurer	16.00
C. F. Ferree, Expenses of Attending Conven- tion with Exhibit	47.70
Journal of O., O. & L. Subscriptions	660.00
E. S. Jones Sons Co., Bill Heads for Treasurer	14.45
University Press, Insurance on Books	7.00
Journal of Amer. Institute, Circular Letter ...	95.45
Total Expenditures	—————\$1,123.17
Balance on Deposit in R. I. Hospital Trust Co.	297.39
	—————\$1,420.56

Dues unpaid, \$375; paid members, 141; unpaid members, 64; new members, 9; 16 owe for two years; five owe for 3 years or more.

WM. M. MUNCY, *Treasurer*.

Have examined these accounts and found them correct.

G. J. ALEXANDER,
ALVA SOWERS,
J. J. WYNN.

The Treasurer read his report, and on motion by Dr. Mackenzie, and seconded by Dr. Metzger, the report of the Treasurer was adopted. However, there was the following discussion:

THE CHAIRMAN: What is your pleasure on this report? Shall we have an auditing committee appointed or will you suggest that the names mentioned be dropped individually without going into the financial end of it? Is there any suggestion?

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DR. MACKENZIE: It is rather a difficult problem. The fellow that doesn't usually pay up for several years is usually not an asset to the Association. I do not arise to offer any solution of this problem, but simply to say that I wonder if it is not possible to find some way of approaching these different parties, and seeing if we cannot induce them to stay with us, and pay up. Some one has offered the suggestion that we might put them on probation for about a year. Three years is really a short time in which to dismiss anybody and I think I will make a motion to the effect: That we put these parties on probation for another year before dropping them, with the suggestion that they be personally solicited, if possible.

DR. METZGER: I second the motion. And I think we could get a report from them, if possible, one way or the other, and we should secure from that person an expression of his desire about the matter in writing. If we show that spirit toward them, I think we can not help but win them back.

DR. MUNCY: I might say, as Treasurer, that I have nothing personal in the matter, but I have to abide by the rules and regulations of the Association. Prior to the JOURNAL matter coming through the Treasurer's office, I had been very lenient to these gentlemen, and I never used to bother with the men in this manner, and we finally did get the money; but on account of the JOURNAL dues, and the fact that the JOURNAL needs the money—I felt I would have to put through this registered letter and bring the matter before the Society. But I fully agree with Doctor Mackenzie that we cannot afford for the few dollars involved, to lose anyone from the Society. If it is possible, we would prefer to get them to pay their dues and have them stay with us.

DR. BENTLEY: Mr. Chairman, I think Dr. Mackenzie's motion is very good. However, I do not think the men should be completely dropped. I would suggest putting them on probation or suspending them, but I think that during that period of suspension the JOURNAL should not be sent to them. That is an actual expense, and so I would like to make an amendment that, during the period they may be placed on probation for two years, and during which time they should not receive a copy of the JOURNAL. I feel confident that during that time the Secretary and Treasurer

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can get a lot of those men to come back. While I was Treasurer of our State Society in Michigan, we have put on our books, in Michigan, a special rule that left that matter entirely in the Treasurer's hands, and I got a lot of them back. Now, where your men drop back for ten or twelve years—and we had a lot of that kind—you cannot get them to pay up for ten or twelve years. I figured that it was better policy to forget a lot of the old dues and get the men back rather than to insist on collecting all the dues that they may be in arrears.

Now, the question of dues, after all, is rather a minor matter with us. They have to pay it, but yet I do feel that if a man has dropped out, if he cannot come back until he has paid up a lot of arrears, he will not do so, and I figure it better to wipe the slate clean and start afresh than to keep him out.

I make that amendment to the motion, that they be suspended for two years, during which time they shall not receive the JOURNAL.

DR. SUFFA: Wouldn't it be wise to have some communication between the Secretary and the Editor to know when these men are in arrears, and thus to cut the JOURNAL off before these three years expire, and in that way possibly bring these men in, for they may say, "Well, I want that JOURNAL," and they may come in.

DR. MACKENZIE: They are receiving something for nothing.

DR. SUFFA: I don't think you ought to do it.

THE CHAIRMAN: The Auditing Committee will consist of the following: Dr. Alexander, Dr. Alva Sowers, Dr. J. J. Wynn.

DR. MUNCY: Since the Society is handling these names that are to be dropped, as a committee of the whole, will they also decide what to do in regard to Dr. Shallcross?

DR. MACKENZIE: I move that the doctor be reinstated.

DR. WEAVER: Second the motion.

(Which motion was duly carried.)

THE CHAIRMAN: We will next hear the report of the Necrologist, Dr. Ella G. Hunt.

DR. HUNT: Mr. Chairman, and ladies and gentlemen. Very seldom is it the pleasure of a doctor to make a report such as I do today. No deaths. (Applause.)

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THE CHAIRMAN: The next thing is the election of new members.

(The Secretary read to the meeting the names of new applicants suggested for membership, and on motion of Dr. Mackenzie, duly seconded by Dr. Weaver, the new applicants were elected members by acclamation.)

NEW MEMBERS

Dr. Frank J. Novak, Jr., 30 N. Michigan Ave., Chicago, Ill.
Dr. Melvin J. Stearns, 63 Caroline St., Ogdensburg, N. Y.
Dr. Ralph W. Ridge, 905 Sybil St., Ann Arbor, Mich.
Dr. Wm. O. Merrill, 1655 David Whitney Bldg., Detroit, Mich.
Dr. Earl D. Carter, 336 N. Fountain St., Wichita, Kans.
Dr. Stuart H. Bowman, 386 Atlantic St., Stamford, Conn.
Dr. Harry L. Brooks, The Clinic, Inc., Michigan City, Iowa.
Dr. Joseph R. Criswell, 635 52d St., Philadelphia, Pa.
Dr. Carroll F. Haines, 2102 Chestnut St., Philadelphia, Pa.
Dr. Chas. F. Voorhis, 4th and Morgan Aves., Palmyra, N. J.
Dr. W. M. Trowbridge, Main St., Viroqua, Wis.
Dr. G. H. Galford, Unity Bldg., Bloomington, Ill.
Dr. John W. Webb, 438 Bankers' Trust Bldg., Indianapolis, Ind.

REPORT OF COMMITTEES

THE CHAIRMAN: Are there any standing committees, Mr. Secretary?

THE SECRETARY: No, sir.

THE CHAIRMAN: Is there any unfinished business?

THE SECRETARY: No, sir.

THE CHAIRMAN: Any new business to be presented?

DR. MACKENZIE: Mr. President, I would like to present a report from the Editor and Business Manager of the JOURNAL. I believe that we did have a committee on the JOURNAL but it doesn't appear here, and if we have no such committee it might be well for the Secretary, if he has the minutes, to look back to the original committee that was appointed at the Asbury Park meeting. I think Dr. Haseltine interviewed me at that time and if that committee is still standing I would like to forward my report if it is in order.

THE SECRETARY: I have no record with me.

DR. MACKENZIE: Or, if there is no committee standing, I

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move that a committee be appointed to review this report and bring in their findings later.

STATEMENT OF ACCOUNT, JOURNAL OF OPHTHALMOLOGY, OTOTOLOGY AND LARYNGOLOGY

1920, 1921, Jan.-June 15, 1922

1920

Receipts

Members' Fees	\$552.00
Subscriptions	145.90
Professional Card Adv.	459.00
Opticians' Direct. and Sundry Advertising	779.96
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	\$1,936.86
Total Deficit	\$1,307.09
	<hr/>
	\$3,243.95

Expenses

Printing, Proofreader's Salary, Postage, etc.	
Total	\$3,243.95
	<hr/>
	\$3,243.95

1921

Members' Fees	\$724.50
Subscriptions	1,169.66
Professional Card Adv.	435.00
Opticians' Direct. and Sundry Advertising	983.90
	<hr/>
	\$3,313.06

Total Deficit	\$1,070.37
Printing, Proofreader's Salary, Postage, etc.	
Total	\$4,383.43
	<hr/>
	\$4,383.43

January to June 15, 1922

Members' Fees	\$210.00
Subscriptions	446.00
Professional Card Adv.	400.00
Opticians' Direct. and Sundry Advertising	629.39
	<hr/>
	\$1,685.39
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	\$1,685.39

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Printing, Proofreader's Salary, Postage, etc.

Total\$1,660.12

\$1,660.12

Total Gain \$35.27

\$1,685.39

Total Deficit 1920\$1,307.09

Total Deficit 1921 1,070.37

-----\$2,377.46

Estimated Deficit for Year 1922\$1,150.00

-----\$3,527.46

Gain January to June 15 \$35.27

Printer's June bill will not be charged until end
of month of June, which will more than
offset

----- \$35.27

Outstanding Accounts Due to Date

Professional Direct. Advertis. and Subscriptions \$228.00

Account New Subscriptions 52.00

Monthly Advertis. 195.46

Monthly Advertis. Due to End of Year* 444.81

----- \$920.27

*Plus Members' Fees.

Average expense for printing, proofreader's salary, postage, etc., can be figured at about\$2,250.00

THE CHAIRMAN: Is there any other new business here?

THE SECRETARY: I have one resignation here. That of Edgar D. George. (Reading letter.)

THE CHAIRMAN: That will have to be referred to the Board of Censors, and they will make their report in new business. The next thing on the program is the President's Address.

(Dr. Rowland temporarily presided as Chairman, while the President gave his address, as follows):

DR. McCLEARY: Mr. Chairman, I first want to thank you very much for the honor you have placed upon me, and I have endeavored to handle the problems of the Society the best I knew. What success we have had has been largely as a result of the co-

operation of our officers who have helped me, and I desire to thank them, and your Chairman. I have a little talk that I would like to put over to you—a thought, and it has been one all my life, and that is the co-operative factor in medicine. It is an old thought, but it has been running through my mind and I want to give it to you, as it has come to me.

PRESIDENT'S ADDRESS

THE CO-OPERATIVE FACTOR IN MEDICINE

That success in the field of medicine is becoming more and more dependent upon the ability to think in co-operative terms is plainly evident to you—members of the O., O. and L. Society. Certainly your own spirit of unselfish co-operation is not that of the professional money-maker or the haphazard specialist completely satisfied with his own work.

Rather, it is the spirit of those with high professional ideals. Whether local or national, co-operation in the exchange of real scientific procedure is due to the work of trained minds in their tireless and systematic search for the best with which to battle against and to prevent disease.

Not only is the work being carried on in the seclusion and isolation of offices, laboratories and hospitals, but in every field of human endeavor; for the realm of medicine is as broad as humanity itself.

Leaders in this field must expect that there will be followers who, failing to equal or excel, seek to depreciate and to destroy, but this only confirms once more the superiority of that which they try to supplant. There is nothing new in this. It is as old as the world. Scientific co-operation, give and take, bartering on the exchange of those sound homœopathic principles is quite satisfactory even if unrecognized. No matter how loud the clamor of denial, that which is good or makes itself known, if it deserves to live—lives.

You fellow members who were so fortunate as to serve in the Medical Department of the World's War, certainly gained a tremendous insight into the advantage of co-operation. This, I believe, is the most valuable lesson for the future of medicine. For instance, in default of up-to-date knowledge one too often continues the same course of treatment, but with this modern idea of

co-operation we utilize the assistance of the internist with his interpretation of constitutional support; the chemist with his solution of the toxic and non-toxic compositions; the bacteriologist and pathologist in tracing the living carriers of infectious diseases.

In fact, laboratory assistance is a daily necessity in differentiating between local and causative, general or special reflex symptoms which in themselves may be local or secondary manifestations of some systemic or organic disease. You are all familiar with the numerous reasons for these clinical tests, but I am especially anxious to call your attention to the study of the chemical constituents of the blood. In blood chemistry the parts chiefly studied are the non-protein nitrogen, urea-nitrogen, uric-acid, creatinine, sugar, carbon dioxide combining power of the plasma, cholesterol chlorides, amino-acid nitrogen, ammonia nitrogen and the basal metabolism. The latter is of particular value in the disturbance of the ductless glands. Endocrine disorders show a hyper- or hypo-activity in carbohydrate tolerance.

The laboratory, as well as these other branches of medicine, is a great asset in our specialty. Complex problems of the body as expressed by the Eye, Ear, Nose and Throat are too infinitely complicated to be seen by one department. Preëminently scientific in training, the specialist alone is imperfectly equipped to carry this task to a complete and successful solution without co-operation.

We must be so familiar with these problems that we can immediately call into active participation and co-operation that part of our organization which gives assistance in correcting the abnormal conditions confronting us.

Year after year we see the wreckage of countless fads and fancies cast by the wayside. Experience has taught us to adhere closely to the established facts in medicine. The application of Similia is not impaired by the lapse of years, even though the laboratories of our medical colleges present new scientific facts by way of symptomatology and blood chemistry. Knowledge such as this is valuable in that it corroborates the former provings by scientific research. It is, in fact, becoming more impressive, that the daily practice of medicine, by the very force of the fundamental nature of life in its material aspects, is turning more and more to the value of thorough co-operation with the allied departments of

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medicine in the final solution of the many perplexing problems of the prevention and cure of those diseases that present themselves in our specialty.

In accordance with this idea, there is no undertaking which holds out greater promise of positive results in the practice of Ophthalmology, Otology and Laryngology than the concerted attack upon its problems by the close scientific co-operation and co-ordination with Surgeon, Internist, Gynecologist, Obstetrician, Dermatologist, Neurologist, and especially the Diagnostic Laboratory.

Thus you see that the all-important thought I present is that of co-operation and co-ordination.

By the same token, I sincerely recommend that in our respective home-centers, we develop a specific organization of team workers to get the best of assistance to bring to bear upon these problems and difficulties.

We can have a staff of private workers, or we can use certain men in their respective fields, but irrespective of the details of private arrangement, the important point is to create the strongest scientific organization where all possible pros and cons can be legitimately taken care of. The abnormalities of the eye, ear and upper air passages call for a broad knowledge of embryology, anatomy and physiology, not to speak of modern sciences, to lay bare their exact nature. From every angle we recognize the tremendous demand for co-operation and co-ordination.

Good team work is necessary if we are to get into touch with the best that is being thought out and accomplished today by leading men. In fact, their success shows a genuine working value in featuring the continued exercise of getting together to seek more truths.

For instance, the value of a report from the consultant or from the laboratory as an aid in the diagnosis, prognosis or the treatment is without dispute. But this is not enough. We must convene at a time and place prepared to exercise professional expression of investigation and experience apropos of the case or cases under discussion. These discussions, insistent upon the best in science, soon develop a sincere and fearless attitude in the physician in behalf of all that concerns him in his relation to the patient. Such occasions present excellent opportunities in stimulating much

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study and interest and one soon finds himself deeply engrossed in the active association of other organizations, research laboratories or medical societies.

Thus I sincerely recommend to you the full co-operative and co-ordinating idea of team work, as an economic procedure, in the realization of the ideals for which our organization stands.

Now, to make a practical application, should not the principles of co-operation and co-ordination be just as valuable to this Society as in the function of private practice? If you are agreed, may I recommend that the officers of this organization be assigned certain definite duties?

First, that the First Vice-President proceed as the Chairman of the Committee for securing applications of new members for this Society. A recognized standing committee of this nature can assume all the responsibilities of increased membership and will be able to confine its efforts to this special field.

Second, that the Second Vice-President proceed as the Chairman of a special committee on education, to assist, advise with and to encourage physicians who are thinking along the lines of specializing in Ophthalmology, Otology and Laryngology, and recommend a course of study at the New York Ophthalmic College. A committee of this kind would be a wonderful help to prospective Ophthalmic students and O., O. & L. Society members. The annual records of this committee would be passed on to the different chairmen each year, giving data on men who have shown an individual interest in this kind of work.

DR. ROWLAND (Chairman pro tem): You have heard the excellent report of our President, and according to the custom of our Society, I will appoint a committee to which this address will be referred. Dr. Burton Haseltine will be Chairman; Dr. E. A. Strickler and Dr. H. A. Foster making up the balance of the committee.

(Dr. McCleary resumes the chair.)

WEDNESDAY A. M.

THE CHAIRMAN: We will now start with the business session, and we will have the report first of the Attendance Committee, by Dr. Miller.

DR. MILLER: The total attendance of all registered to date is

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eighty-seven. That includes those who are members and not members. I didn't get them all, and there are more than that.

THE CHAIRMAN: The next committee is the Nomination Committee. The chairman is Dr. Fellows.

DR. FELLOWS: Mr. Chairman, your committee reports the following nominations for the coming year:

For President—Dr. Muncy.

For Treasurer—Dr. Rowland.

For Secretary—Dr. Bentley.

For First Vice-President—Dr. Blackburn.

For Second Vice-President—Dr. Peck.

For Necrologist—Dr. Hunt.

Censors—Drs. Sowers, Macfarlan, Lynn, Boynton and J. J. Wynn.

THE CHAIRMAN: This makes a wonderful outfit and team for the next year.

On motion duly made by Dr. Weaver, seconded by Dr. Hunt, the nominations were moved to be closed, and the election declared unanimous.

DR. MUNCY: Fellow members, this is a wonderful opportunity for more work and I am glad to talk to you about it. I have always done what I had been asked by the officers of the Society and the members, and I shall proceed to do my best. This Society has conferred upon me the greatest honor that I can ever receive, as a specialist, in this country. I have watched the Society as an officer for a number of years. I have seen its progress each year, successfully upward from the time when it was a little thing in numbers, attendance and enthusiasm. Each year, it has gone upward and forward, with the wonderful presidents and secretaries you have had.

It is now my task to take the torch that this worthy president will give to me at the end of this meeting, and carry it on for another year. I know that the loyal support this Society has always given to its officers will continue, and with that support we will go on from year to year, to a higher position as a Society among special societies in this country.

This is your Society. We are only the vehicle through which you work. I have attended a number of the larger societies of the country for a number of years, and in none of those societies is

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there the freedom of discussion, nor is there the chance for the young man to ask questions, or you might say, to develop himself, as is given in a small society of this type, and I think that as an organization, we cannot do more for the development and advancement of our specialty in this country than to give the hearty support to this little society of ours. I thank you. (Applause.)

THE CHAIRMAN: I want to say right here, knowing how Dr. Muncy has kept this Society on its feet from a financial end, and the ability he has put into it through his thoroughness, that we feel very much encouraged for the ensuing year with him. The doctor is a student and a business manager, and I feel very happy to turn my gavel over to the Doctor, knowing he will do far better work than I have done this year. I haven't been able to do very much, but the officers and the secretary and the treasurer have made this a very successful year; I know you have all made a success of this Society, and I know we will have a cracker-jack meeting next year, with Dr. Muncy at the head of it.

We have Dr. Rowland with us now.

DR. ROWLAND: Mr. President and members of the Society. I don't know just what this means. I have been out, but they tell me that I am elected to collect your money.

Now, in my experience in some student organizations, the whole scheme is a matter of business, and the reason why an organization don't succeed is simply a matter of poor business. I note that the dues have been planned according to the amount of membership, and the obligations of the organization are so arranged, and if every man lives up to his obligation and meets it as he ought to, there isn't any further trouble to be considered; and if you want to make it hard for me, you will just be slow in responding to the notices sent out, and if you want to make it easy you will respond promptly.

I am glad that you have the confidence in me to have me handle the money and I am anticipating a lot of fun as I never had this opportunity before. (Applause.)

THE CHAIRMAN: There was another committee to report on the President's address, and the chairman is Dr. Strickler.

DR. STRICKLER: Your Committee on President's Address begs leave to report that your committee concurs fully in all points made therein. That full co-operation between the various workers

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in the field of medicine furnishes the best solution to the many intricate problems presented in practice, and that in no other way can we discharge our duty to those who entrust their lives and their health to our care. The co-operation, co-ordination and team work are essential to a realization of the ideals for which our organization stands.

We approve the recommendations that certain definite duties be assigned to the first and second vice-presidents, and in support of the same, offer the following resolutions:

Resolved, That the First Vice-President shall be constituted Chairman of the Committee for Securing New Members for this Society.

Resolved, That the Second Vice-President shall be constituted Chairman of a Special Committee on Education to assist, advise with and encourage physicians who are preparing themselves for specializing in Ophthalmology, Otology and Laryngology, and recommend a course of study at the New York Ophthalmic College.

Respectfully submitted,

DAVID A. STRICKLER, *Chairman*,

DR. SUFFA,

DR. FOSTER.

THE CHAIRMAN: Is there a motion in regard to the resolutions?

On motion made by Dr. Lynn, duly seconded, the report was adopted.

THE CHAIRMAN: There is a special committee to report in connection with the JOURNAL. Dr. Denman.

DR. DENMAN: The committee consists of Dr. Metzger, Dr. Muncy and myself.

THE CHAIRMAN: The special business and unfinished business and the report of the censors on new members will be postponed until tomorrow morning. We have to get through and we have a very important case.

THURSDAY MORNING, JUNE 22ND

THE CHAIRMAN: We have some unfinished business, but first let us take up the business of the censors.

DR. BENTLEY: Dr. Williams has one application, and I also

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have the application of Dr. Novak, with the cash. Dr. Novak is a graduate of Illinois Medical College in 1914, and he is O. K'd. and endorsed by Dr. Mackenzie and myself. There are several others that have endorsed his application.

THE CHAIRMAN: You all remember Dr. Novak as giving the talk the other day, and the clinic at the Cook County Hospital, on Diathermic Work. He is very much interested in our work, and would like to become a member. We will postpone that for a moment as we have some unfinished business that our new President wants to bring up.

DR. MUNCY: I am not yet your new President. However, I wish to move that Dr. Edward Beecher Hooker, of Hartford, Conn., who has been a member of this Society since its beginning, shall be placed on the honorary roll of the Society as to membership.

DR. SUFFA: I second the motion.

(Motion carried.)

DR. BENTLEY: I have one other matter to bring up. Last year, for non-payment of dues, Dr. Brooks, of Michigan, was dropped from membership. He sent me a check for ten dollars, in part payment of his dues, and he owes four more which he has not paid. I have his check for ten dollars, and I move that he be reinstated. Now, that ten dollars brings him up within the three year limit, does it not?

DR. MUNCY: How much does he owe?

DR. BENTLEY: I don't know, but he sent me a check for ten dollars. My feeling is that he has shown his willingness to do that, and he is one of the old men. I move that he be reinstated.

DR. DENMAN: I second that.

(Motion carried.)

DR. HASELTINE: Mr. President, if this is the best time to do it, I would like to make a motion and move that this Society express, through its officers and secretary, in writing, its appreciation of the work of these visiting men. I want to include Dr. Novak and Dr. Suker, and particularly I want you to appreciate, if you were not at the County Hospital, that probably the like of this eye clinic has never been presented in this country, and I doubt if there have ever before been so many interesting non-surgical eye cases presented as on that day. They had that room wired for this

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particular occasion, and I want to include Dr. Suker, Dr. Fisher, Dr. Gradle, Dr. Novak, and also the name of Dr. Burrill, whom you will appreciate in a few minutes. We will not omit any, you understand. I think our members should write letters to these men, after the meeting is over, expressing in a suitable way what I have presented to you.

DR. GOLFORD: I second the motion. And just a moment. I had the pleasure of talking with Dr. Suker after the clinic and I emphasized what Dr. Haseltine said, in substance, that he had presented to us the finest clinic that I had ever witnessed, because in my experience in New York City they had selected cases there that were almost book-form in their character, and this man had gotten a lot of pathological cases there that were absolutely different, and he gave me an invitation Monday or Tuesday afternoon at any time to run in there and follow any work wanted. I thought that was very kind.

THE CHAIRMAN: You have heard the motion?

(Motion carried.)

THE CHAIRMAN: I would like to state that while the instructions will be carried out by your officers to the best of their ability, it would be a very nice thing if any of you would individually take a little pains and write to these doctors. I know you can and I would appreciate it very much, and it is a good time to follow the Golden Rule, and I, personally, would appreciate an effort from anyone here. Is there more new business?

DR. ALEXANDER: The report of the Auditing Committee is that the committee has examined the Treasurer's accounts and finds them correct.

THE CHAIRMAN: Now the time is short and I want to call for the report of the censors. Dr. Sowers.

DR. BENTLEY: The ones reported are Dr. Haynes and Dr. Webb and Dr. Frank Novak. They have all been O. K'd. by the Board of Censors.

THE CHAIRMAN: Shall we elect these applicants to membership? Is it moved that the report be accepted?

DR. RUMSEY: I move that we accept them.

DR. BOYNTON: Second it.

(Motion carried.)

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THE CHAIRMAN: There is one more report, that of the Attendance Committee, before we adjourn.

DR. MILLER: The total number of those registered is 122, and that doesn't include a few that came in, and there were probably 20 or 30 that I didn't get. The daily attendance maximum was reached at 68 on Monday. Tuesday it was 48 at 10.30. Wednesday there was a maximum of 50 at 10.30, and today there is a maximum of 62 at 11.30. Total attendance, 122.

Report of Committee on Golf Tournament. Score:

Dr. Gilford, Bloomington, Ill. Gross, 99; net, 77; first.

Dr. Arndt, Mt. Vernon, Ohio. Gross, 87; net, 77; long hole.

Dr. Foster, New York. Gross, 100; net, 80; short hole.

Dr. Alexander, Philadelphia. Gross, 137; net, 113; booby.

THE CHAIRMAN: There is one more point of business.

DR. BENTLEY: I just got the bill of the program which I was not able to include before—\$43.37.

THE CHAIRMAN: I think it is best we receive the motion to have the bill paid.

DR. WEBSTER: I move to pay it as read.

Motion carried.

Announcements.

On motion duly made and carried, the session was declared adjourned.

PRIVATE POST-GRADUATE INSTRUCTIONS

The Editor will give clinical courses in Otology to a limited number of men desiring it. Especial attention will be given to the subject of tests for the hearing and the vestibular functions. The course will cover fifteen hours, to be completed in one week. Courses will begin November 6th, 14th, 21st and 28th. A longer course can be arranged for those who may desire it.

DERMOID TUMORS OF THE CONJUNCTIVA *

BY ALVA SOWERS, M.D., F.A.C.S.

Chicago, Ill.

WHEN Burton Chance, of Philadelphia, presented two cases of dermoid at the sclerocorneal margin before the Wills Hospital Ophthalmic Society he prefaced his remarks as follows:

"The so-called dermoids of the sclerocorneal margin may be common enough and their characteristic properties well enough known, yet their occurrence is only relatively frequent. Indeed, in Dr. Schwenk's service at the Wills Hospital in the past fifteen years only five instances have been recorded."

It seems, therefore, that this case report with a few remarks relative to the histology of such tumors may be of interest.

Greff classifies dermoids according to their position.

(1) Dermoids of the corneascleral margin are dense tumors of a porcelain white, or dull rose color, most often found at the outer margin of the cornea between the insertions of the muscles, where they lie deeply embedded, partly in the cornea, partly in the conjunctiva and sclera, and rise but slightly above the surface of the eyeball. They are always congenital, and are so characteristic that they cannot readily be mistaken for any other kind of tumor.

The structure is seen with the microscope to be like that of a piece of skin; an epidermis composed of several layers, with a connective tissue stroma beneath it, containing sweat glands and hair follicles. The surface is often covered with fine, wooly hair.

The origin of these tumors is attributed by von Duyse to adhesions of the amnion with the surface of the eyeball; by Remak, to a fetal invagination of the epiblast.

Such dermoids are usually small in childhood, the average size is about that of a lentil, but later in life they may grow larger. They should be removed as early as possible because of the increase in size to be expected, as well as on account of the ugly disfigurement of the eye. The eyeball is intact and well formed in the great majority of cases, but in some rare instances, like the

*Read at the Annual Meeting of the O., O. & L. Society, Chicago, June, 1922.

DERMOID TUMORS OF THE CONJUNCTIVA

following, its development is interfered with to a greater or less degree by the disturbance occasioned by the presence of the tumor.

Schmidt-Rimpler saw in the eye of a calf a piece of skin covered with hair, that began at the inner margin of the cornea and covered the greater part of its surface. The cornea was rudimentary, the iris was adherent to it, and there was no anterior chamber. The lens protruded through the pupil into the dermoid and was constricted.

Another interesting case was seen in von Graefe's clinic. A child eight months old had a congenital tumor of the eye which had nearly doubled in size since birth. It was divided into two portions; one an ordinary dermoid, covered the entire cornea, with the exception of a narrow edge, and was joined by a short pedicle to the other, which was similar, as large as a cherry, and protruded from the palpebral fissure. The entire tumor was covered by skin with fine hair. The eyeball appeared to contain no lens. Microscopical examination proved that the tumor was a dermoid, and that the skin was provided not only with hair, but also with sweat glands, isolated papillae, and hair follicles. The cornea was absent, its place being taken by connective tissue, to which the iris was adherent. The latter could be recognized only as a thick layer of pigment. There was no anterior chamber.

Bernheimer describes the case of a child six months old, who had two tumors, as large as cherries, in his right eye, where they were nearly in contact and kept the lids apart. Later they grew larger and covered the entire cornea. Examination then revealed that the cornea had been so implicated in the dermoid that scarcely a trace was left, and that a total staphyloma had been produced with a proliferation of the iris.

In Manfredi's case a well-formed orbit contained a sphere as large as a pea instead of an eye, and the malformation increased somewhat as the child grew. This stump of an eyeball was covered anteriorly with a white, hairy skin, a portion of which was excised and found to present the histological characteristics of dermoid.

Wagenmann examined a tumor that protruded from the orbit of a newborn infant. He found it implanted deeply in the orbit by a pedicle as large as a quill. After division of this pedicle the tumor was removed and the orbit was found to be lined with mucous membrane, but otherwise exactly like a normal one after

enucleation. In all other respects the child was well formed and healthy. Section of the tumor revealed a piece of bone and a rudimentary eyeball. It was encapsuled in skin about 1 mm. thick, covered with fine hair.

(2) Dermoids of the skin or subcutaneous tissue of the lids are almost always situated at the outer part of the margin of the bony orbit. They are not very rare, and are usually about as large as peas or plum stones, but may subsequently grow larger. As a rule, they are very firmly adherent to the periosteum of the deep surface or the orbital margin, and sometimes they are to be found deep in the orbit. They are congenital cysts with firm walls, and contain a broth-like substance composed of desquamated, cornified cells and detritus, sometimes with fat and hair.

These tumors are thought to be caused by a deposit of epithelium-producing germs at the places affected.

Gaylord and Aschoff describe dermoids and atheroma cysts as follows:

"Cysts whose walls present the characteristic structures of the skin are known either as dermoids or atheroma cysts. These occur most commonly in the region of the outer skin where they develop from foetal inclusions. The contents of the dermoid cyst are usually a sebaceous material in which is imbedded a large amount of hair. The contents serve to distinguish true dermoids from the so-called atheroma cysts, which are produced by cystic dilatation of the hair follicles or from the so-called simple epidermoid cysts, which are likewise derived from foetal inclusions. All of these forms of cyst contain sudoriferous material. When examined with the microscope the material consists of fatty detritus, numbers of squamous epithelial cells without nuclei and a large amount of cholestrin. The epithelial cells may be recognized by their delicate outlines, and as they occur in groups, may produce pavement-like figures. Microscopic examination reveals the essential difference between true dermoids and the epidermal and simple retention cysts. The wall of the retention cyst is composed of smooth connective tissue upon which rests a thin layer of flattened epithelium. The walls of the epidermoid cyst (these are the ordinary atheroma cysts) show the characteristic papillae and flattened epithelium of the skin, while the dermoid cysts contain all the characteristic structures of the skin, including hair follicles and sudoriferous glands.

DERMOID TUMORS OF THE CONJUNCTIVA

The sudoriferous glands are usually very large while the sweat glands occasionally show an unusual development of the spindle cells of the tunica propia."

From Parson's work on the Pathology of the Eye, we learn that these tumors were described as early as 1742, and four cases were published by Wardrope in 1808; they were named dermoids by Ryba in 1853.

While commonest at the outer part they occur rarely at any part of the limbus and even under the outer canthus. They are often associated with other malformations, as colobomata of the lids, fleshy bands from the globe to the face, etc. They occur in lower animals and have wool instead of hair in case of the sheep. They rarely start growing until puberty and it is then that the hairs develop.

When there is a notch in the lid the tumor corresponds in position with the gap. They usually have few or no vessels. The epithelium has all the characteristics of true epidermis possessing a superficial horny layer, stratum lucium, stratum granulosum and malpighian layer of prickle cells.

The corium consists of fibrous tissue with many elastic fibres and a few vessels. The papillae are usually ill-developed. Pigmented spots have been found in the superficial layers. The deeper layers are aveolar, the fibres being more loosely set, and containing fat, which may be conspicuously developed and form a connecting link with the fibro-fatty tumors.

In the deepest part the fibres are continuous with those of the sclerotic so that the tumor is immovable upon the eye; rarely is it movable.

Various theories have been suggested for the explanation of dermoids. Ryba suggested failure of complete closure of the lids, with consequent cornification of the conjunctivae and cited the correspondence of dermoid and lid notch. This view is supported by Bland-Sutton and Tracher Collins; the latter regards cryptophthalmia, in which the whole surface of the eyeball is covered with skin, as the ultimate manifestation of dermoid development. Galenga drew attention to the *aplica semilunaris* which in foetal life covers the globe, like its phylogenetic equivalent, the nictitating membrane. He thought it might remain adherent to the limbus. Osborn thought it might be a remnant of the epiblast which forms

the lens. Van Duyse considered it was due to adhesion of the amnion to the eye. Their theory has been held in modified form by Zannelongue and Vasseux.

The epithelium even in ordinary dermoids is not always epidermal, but may be conjunctival, especially when the growth is covered by the lids. If it projects between the lids the exposed part becomes horny, but this is the case in many other pathological conditions, *e. g.*, anterior stapholoma, etc.

The history of the case we wish to report to-day is as follows:

Name, Miss M. W. Age, 20. Occupation, nurse in training, Illinois Masonic Hospital.

HISTORY.—Since a baby she has had tumor at each external canthus. The tumor of the right eye began at the limbus and covered the external inferior quadrant of the cornea and extended to a point about $1\frac{1}{2}$ cm. behind the external canthus. It was immovable. About two years ago a partial removal was effected under local anaesthetic. Previous to this operation the tumor was so large that the patient could not close the right eye. At present one or two hairs are protruding from the tumor mass and on pressure a colorless fluid can be expressed from a small opening in the surface. The tumor presents a yellowish white appearance and the part extending over the cornea produces a marked disfigurement. There is a slight dehiscence at the external canthus which is characteristic of this growth. The tumor is covered with conjunctiva in which a large number of small vessels may be seen. The vision in the right eye is 20/200, not improved by glasses. She has a slight convergence, the appearance of which is exaggerated due to the disfigurement of the external part of the cornea. The astigmatism is very marked and an accurate measurement is difficult. There are no congenital defects except a similar growth at the external canthus of the other eye. This growth differs in that it is smaller, does not extend to the cornea and has a large number of very small hairs instead of one or two coarse hairs as the right one presented. The tumor of the left eye differs also in that no fluid can be expressed from it. The vision is 20/20.

January 25, 1922, operation, Illinois Masonic Hospital.

Under general anesthetic the tumor of the right eye was dissected out by short dissection and found to be adherent to the temporal bone in the orbit, about $1\frac{1}{2}$ cm. posterior to the external

DERMOID TUMORS OF THE CONJUNCTIVA

canthus. A portion of the tumor had been previously removed, hence at this time we extirpated only the large portion lying on the outer surface of the eyeball and orbit. At a subsequent time, under local anesthesia, cocaine 4 per cent., topically applied, we removed the portion imbedded in the cornea. This was accomplished with the Reynolds dissector and an attempt was made to free all tumor mass from the cornea. This seemed a precarious undertaking, as we found the tumor deeply embedded in the cornea, but we feel all neoplasm was completely removed, though a gray cornea remains.

The parts were submitted to the pathologists, Dr. Moore and Dr. Hecktone of the National Pathological Laboratories, with the following report:

Sections through the central portion of the first growth has a smooth regular epithelium beneath which is a layer of dermis containing a moderate number of round cells. The greater portion of the corium consists of a dense fibrous tissue with blood vessels. Beneath this, fatty tissue and fibrous tissue are in about equal portions. A few hairs and sebaceous glands as in normal skin are present.

The histological picture of the second is much the same as that of the first, except that the interlacing fibre bundles in that portion of the tissue beneath the epithelial layer are more dense and have fewer nuclei.

It seems from the findings of the various authors that so-called dermoids may or may not be cystic, and that they vary considerably as to the histology. The most definite fact to be noted is that they are all derived from the epiblast and may contain any of the structures found in the skin.

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Editorial

SCIENTIFIC BUSINESS OR SENTIMENTAL BUNCOMBE

A NEW YORK newspaper editorial says, "Lots of people think the medical profession has degenerated, that the modern doctor is more concerned with collecting his bill than with administering aid to sufferers." It then goes on to cite an instance of a doctor who gave of his own blood for transfusion, to the mother of three children, who was at the point of death. The editorial ends, "Is it not a fine, inspiring thing to read about Dr. X? He is the worthy inheritor of the finest traditions of a noble profession."

The question arises as to whether lots of people do think the medical profession has degenerated and the modern doctor is an avaricious brute, callous to the sufferings of mankind. It hardly seems possible that the layman resents the small amount of business sense acquired by the modern doctor. Would it be a great source of satisfaction to our patients to have our statements rendered semi-annually or annually or every now and then, as was once the custom? Would we strengthen the respect of our ability and intelligence if we reverted to 60 per cent. collections and waited for patients to forget, move, or die, before placing a value upon our services?

Or perhaps it is not the method of our collection, but the size of the fee, that has caused criticism. No unionized doctors have established a monopoly in restraint of living, to the knowledge of the writer. A doctor of proven ability receives a higher return for his services than his fellow of lesser ability, but professional services are still available for any fee from zero up.

If a man of no means finds himself, justly or unjustly, a defendant in a court action, the court assigns a lawyer for his defense, or if he finds himself ill, whether it be due to improper care of himself or not, he can go to a clinic. A man of small means can

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retain a lawyer or a doctor of limited experience and a man of great means can retain a professional man of established ability. The president of a large banking institution is paid a high salary because he is worth that to his organization. The basic law of supply and demand holds in medicine as in every economic situation. If Dr. X places a high value upon his services and his ability does not justify it, he will not get it as long as there are a hundred and fifty thousand doctors to turn to.

The old-time family doctor was a lovable character in retrospect. Song and story and painting call to mind the old man of Santa Claus visage who held the children upon his knee and whispered words of comfort to the ailing woman and gruffly gave courage to the sick man. His creaking buggy and old gray horse took on the appearance of a chariot drawn by winged steeds as it approached the home of the sufferer, who had prayed throughout the night for relief from the mysterious illness.

But were his methods more efficacious in restoring health than our present day care? Would the layman have us discard our advanced knowledge of the human organism and our methods of treatment, and scrap our automobiles and throw away our razors? Then why expect us to ignore present day business methods which enable us to have our secretaries render accurate bills at regular intervals, which will yield a return that allows us to devote our time and effort toward the pursuit of further knowledge for the relief of ailing mankind?

No, we do not believe that the Editor's "Lots of people think," expressed the opinion of even a decent sized minority of our laymen, and without belittling the act of our fellow who gave his blood for transfusion, we do not feel the necessity of heroics for the sake of restoring the belief in our sincerity in upholding "the finest traditions of a noble profession."

G. E. G. N.

MEDICAL SURVEY

ABOUT a year ago the Editor called attention to the Medical Survey, a monthly reference work in medicine. This is an enterprise of considerable magnitude prepared by the American Institute of Medicine. It ought to receive the support of every

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Eye, Ear, Nose and Throat Specialist. In return for the subscription he will receive more in educational value than the price he pays for it in dollars. For those who do not read foreign languages, they will find the translations already prepared. Besides, in preparing papers one can have the literature of the subject he purposes writing about, carefully looked up by capable translators, for a cost considerably less than he can afford to do it himself. The JOURNAL wishes to again endorse the good work done by the American Institute in behalf of the medical profession. G. W. M.

NEW BOOKS

OTO-RHINO-LARYNGOLOGY.—By Dr. George Laurens. Authorized English Translation of the Fourth Revised French Edition by H. Clayton Fox, F.R.C.S. (Ireland), with a foreword contributed by Sir J. Dundas-Grant, M.A., M.D., F.R.C.S. 350 pages. 589 Illustrations. William Wood & Co., New York. 1922. Price, \$4.50.

In the present edition, the aim has been to preserve its essentially practical character. The text has been revised, some chapters have been condensed, and certain additions have been made. Particular mention may be made of Vincent's angina, hay fever, rhinometry, pseudo-haemoptysis of laryngeal origin, and vaccine therapy. In regard to vertigo, the practitioner ought to appreciate the important role played by the functional examination of the labyrinth, and by the appropriate tests, which have now become standardized. In treating broncho-pulmonary affections, he should know how to employ intratracheal injections of medicated liquids, a method which is becoming increasingly popular, and is a valuable resource for the practitioner in the treatment of chronic diseases of the respiratory tract, particularly broncho-pulmonary suppuration; he should be familiar with this technique, and not regard its employment as a monopoly of the laryngologist. G. W. M.

A TREATISE ON GLAUCOMA.—By Robert Henry Elliott, M.D., B.S., SC.D., Lecturer in Ophthalmology, London School of Tropical Medicine. Exclusive of index, 639 pages, with 213 illus-

EDITORIAL

trations. Oxford University Press, London and New York, 1922. Second Edition. Price, \$8.00.

The book is a classic. It is a complete treatise on the subject of Glaucoma. It contains many helpful hints and should find a large demand among practicing ophthalmic surgeons.

G. W. M.

MEDICAL OPHTHALMOLOGY.—By R. Foster Moore, O.B.E., M.A., B.Ch. (Cantab.), F.R.C.S. Assistant Ophthalmic Surgeon, St. Bartholomew's Hospital. Surgeon, Moorfields Eye Hospital. With 80 illustrations. P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia. 1922. \$3.50.

This book covers the subject of pathological conditions of the eye which are of interest in general medical diseases, in a concise and thorough manner. Doctor Moore's own experience and observations extending over a period of nine years, in the medical wards of St. Bartholomew's Hospital are embodied in the work. The illustrations are excellent and the book should prove of great value to the general medical man as well as the ophthalmologist.

W. G. S., Jr.

BRONCHOSCOPY AND ESOPHAGOSCOPY.—By Chevalier Jackson, M.D., Professor of Laryngology, Jefferson Medical College, Professor of Bronchoscopy and Esophagoscopy, Graduate School of Medicine, University of Pennsylvania. Octavo of 346 pages with 114 illustrations and 4 color plates. Philadelphia and London: W. B. Saunders Company. 1922. Cloth, \$5.50 net.

This book is just as carefully written and as rich in important technique as past efforts of the same author. The name of Chevalier Jackson, the recognized master of Bronchoscopy and Esophagoscopy, is sufficient guarantee of quality to sell anything to which his name may be attached. The nose and throat specialist, whether he does endoscopic work or not, ought to possess this valuable work.

G. W. M.

EDITORIAL

PRIVATE POST-GRADUATE INSTRUCTIONS

The Editor will give clinical courses in Otology to a limited number of men desiring it. Especial attention will be given to the subject of tests for the hearing and the vestibular functions. The course will cover fifteen hours, to be completed in one week. A longer course can be arranged for those who may desire it.

LOCATIONS WANTED FOR EYE, EAR, NOSE AND THROAT SPECIALISTS

THE Editor has been appealed to from time to time by young men fresh from post-graduate courses for suggestions as to where they should go to practice. In quite a few instances he has been able to bring together the older busy man and the younger, yet unsettled specialist. In all such instances where he has been successful in finding for the older man an assistant and for the younger man a location, the results have proven very satisfactory to both parties.

The future policy of the Editor will be to try to bring together these parties through the pages of the JOURNAL and by personal correspondence.

At the present time there is a favorable opportunity for the right young man to associate himself with a successful Eye, Ear, Nose and Throat Specialist with a long practice.

If the aspirant will be kind enough to communicate with the Editor, setting forth his qualifications, he will do his best to place the young man.

G. W. M.

OPPORTUNITY FOR AN ASPIRANT.—Vacancy on the Interne Staff of the New York Ophthalmic Hospital. Communicate with Dr. Charles C. Boyle, 40 East 41st Street, New York, N. Y.

A STUDY OF VACCINE AND SERUM THERAPY AND ITS RELATION TO OTO-LARYNGOLOGY*

BY GEORGE B. RICE, M.D.,

Boston, Mass.

IN presenting this subject to you I am actuated partly by selfish motives, for I hope to be able to bring it before you in such a manner as to provoke discussion, and in this way add to my own knowledge. We must all admit that vaccine and serum therapy is today a very vital topic. The experiments of Metchnikoff, Grubmann, Ehrlich, Buchner, Wright and the almost daily reported discoveries of new antitoxins are arousing deep interest. Twenty years ago enthusiastic bacteriologists were regarded with more or less indifference by the medical profession as a whole, and particularly by the homœopathic body. The plea of the latter was for less labor toward the investigation of etiological factors of disease, and more in the direction of curative methods. As we now survey the broad field of Medical Science we must admit, I think, that our future usefulness, and the wide recognition of the law of similars, the adoption of the single remedy, and the administration of the small dose depends upon the continuance of these bacteriological investigations. There has always been more or less confusion regarding the exact definition of vaccine and serum. According to Allen¹ a vaccine is a suspension of bacteria, living or dead, integral or disintegrated, in an inert fluid—while a serum is the fluid portion separated by coagulation of the blood of an animal containing various protective substances against a particular microbe or microbes, resulting from the methodical and long continued injection of an animal with a vaccine of that microbe—or those microbes—or their toxins, or both. The immunity thus brought about is due to their neutralization of the bacterial toxins circulating in the tissues by means of the corresponding antibodies of the serum. A sensitized vaccine consists of a suspension of bacteria, and the corresponding antiserum mixed and incubated together, until the bacilli and the

*Read before the O., O. & L. Society, Chicago, June, 1922.

¹R. W. Allen—Practical Vaccine Treatment for the General Practitioner.

corresponding antibodies in the serum are so firmly bound together that the repeated washings of the precipitated microbes after removal of the serum will not separate them.

The treatment of infectious diseases with material taken from the infected subject perhaps originated with Robert Fludd² who, in 1638 proposed a remedy against consumption from the sputum of the consumptive. Long before this, crude attempts had been made to cure disease with almost every conceivable animal product, but Fludd seems to have originated a more scientific theory along the line of Isopathy than had before existed. Then in 1775 came Jenner's remarkable discovery of vaccination, and in 1830 Dr. Constantine Hering proposed as a remedy for hydrophobia the saliva of the rabid dog—for smallpox, matter from various pustules, and for psora, the matter from a person with the itch. Hering asks, "May we not expect, if this doctrine be true, that we shall find the specific remedy for every epidemic pestilence in the first case of it that breaks out; and that the matter obtained from this will serve to check the disease in all the rest?"

In 1883 Lux³—a veterinary surgeon of Leipzig, published a work entitled the *Isopathy of Contagion*. In this book he propounds the following: "All infectious diseases contain in their infectious matters the remedies capable of curing themselves." He termed the principle of action "*aqualia aequalibus*," and the system he called "Isopathy." On the appearance of this book Dr. Hering contended that in all these remedial methods there was no deviation from the homœopathic principle; that the principle was still homœopathic and not Isopathic; and that the curative agent was a *similia*, and not an *aequali* or an *idem*. This method of practice was adopted by a few practitioners, but it was not sanctioned by the majority of even the Homœopathic School.

Staph⁴ writes that he can understand the medicinal virtues of the miasmatic contagia of diseases of a constant character like measles, scarlatine, syphilis, sycosis, psora, anthrax, hydrophobia, and the like, and that our *Materia Medica* has been advantaged by the introduction of morbilline, scarlatinine, varioline, syphilline, sycosine, psorine, anthracine, and so forth; but he would condemn the introduction of products like lachrymine, cysticine, and phthis-

²Monthly Homœopathic Review—August, 1906.

³Dudgeon's Lectures on Homœopathy.

⁴Dudgeon's Lectures on Homœopathy.

cine, and leucorrhoeine. It would seem from these statements that the most absurd practices were in vogue partly as an outcome of the exploitation of the Isopathic theory.

Buchner,⁵ of Munich, condemned Isopathy in all its forms. Hermann, in 1841, published a book of 160 pages entitled "True Isopathy," of the employment of the organs of healthy animals as remedies in diseases in the same organs of the human subject.

Dudgeon⁶ said, "Hoffman has stamped with his approval a number of filthy preparations, if possible exceeding in their disgustingly repulsive character any of those precluding his pretended discovery." In writing of the criticisms of the old school practitioners against the homœopathic use of these preparations, he says: "If, then, our opponents will insist in raking up the infinitesimal dirt that some unacknowledged self-styled homœopathists have chosen to introduce into our previously pure *Materia Medica*, we are prepared to meet them on their own terms, but we need but to stir up the great dunghill of their own *Materia Medica* to raise a stench under their own nostrils that shall forever make them repent of having begun the combat with such foul weapons."

For the next few years little progress was made in perfecting this method of curing disease with morbid products, but later Ehrlich, Metchnikoff, Pasteur, Roux, and Behring arrived at the following conclusions: Artificial immunity may be obtained in an active or passive manner. The former may be produced by the inoculation of the organisms, or by their toxins, in suitable intervals until a certain degree of resistance has been obtained. In the process of time a very high immunity may be produced, and this may endure for a considerable period. This method, however, is not generally available for the treatment of acute infections, for it is—comparatively speaking—slowly evolved.

Passive immunity—they say—is obtained by producing a high degree of active immunity in one animal and then injecting a serum into a second animal. The serum to be effectual must be injected as soon as possible after the infection occurs, or otherwise the poisons will already have produced their toxic effects. The serum can also be used as a prophylactic, but the immunity is of short duration.

⁵Idem.

⁶Dudgeon—Idem.

VACCINE AND SERUM THERAPY

According to Watkins ⁷ it is proper to use two distinct terms in defining the two methods of bringing about this immunity. Antitoxin designates the method of neutralizing the poisons of bacteria or passive immunity; and, on the other hand, when the power is exerted against the bacteria themselves it is called antimicrobic or antibacterial.

Immunity ⁸ as it is now defined is the non-susceptibility to those diseases which we recognize as being due to infection. This may be natural or acquired, but it is an everchanging condition. There are many theories of how immunity is maintained. Among them Metchnikoff's—advanced in 1858—the chemical theory of Salmon and Smith, and others, propounded in 1887.

Wright ⁹ has shown when a vaccine is introduced into the blood artificially that a definite course is pursued, and he describes this as the law of ebbflow and reflow, and a subsequent maintained high tide of immunity. Ehrlich's theory stands out most prominently, however, and is generally accepted by pathologists. Large varieties of microbes have been found in the human body—many of those affecting the respiratory tract, namely: *B. influenza*, *Bordet's bacillus*, *B. of Friedlander and Abel*, *pneumococcus*, *streptococcus*, *staphylococcus*, *M. catarrhalis*, *B. septus*, *B. diphtheria*, *Hoffman's bacillus*, *B. rhinoscleroma*, *B. meningococcus*, *leptothrix bacillus*, and others. It has been shown that many of these microorganisms remain inert under ordinary states, and that local changes, and lowered local vitality bring about the requisite conditions for the sudden activity and resulting development.

Under other conditions of general, as well as local loss of immunity, there is an extension of the infection, and finally a chronic inflammation occurs, such as: rhinitis, sinusitis, otitis media, tonsillitis, laryngitis, bronchitis and perhaps all of these conditions to a lesser or greater degree. A so-called head cold, therefore, may begin from thermic changes—local or general irritation of the mucosa from dust, pollens, cold winds, irritating gases. These produce first a simple hyperemia, which soon becomes an inflammation; then an infection with its resulting phenomena—depending upon the type of infection—and the local and general resistance.

⁷Monthly Homœopathic Review—August, 1906.

⁸Vaccine & Serum Therapy—Schorer.

⁹Surgical Journal, April 28, 1904.

It may be said without danger of contradiction that the therapeutic value of vaccine and serums in the treatment of certain diseases is of great value, and should not only be a part of every physician's armamentarium, but particularly this method should be in constant use in the practice of the otolaryngologist.

Now, to take up the subject in a more specific way it may well be asked: are we making the most of our opportunities in this method of treating disease? Are we adopting the recommendation of present day pathologists in the taking of cultures? Are we using the right doses at proper intervals? Are we familiar with reactions? If we use commercial vaccines and serums, do we make proper selections of bacterial combinations to obtain good results? It must not be forgotten that ordinary cleanliness and so-called surgical cleanliness are two different things. In the taking and keeping of the secretions for pathological examinations proper asepsis must be practiced with the greatest care. The pathologist should be given the patient's name, the tentative diagnosis of the disease; how the suspected secretions were taken, and from what tissues. He should also be notified if a full report of the microorganisms is desired, and if an autogenous vaccine is wanted. If an infection of the sinuses is suspected, and a culture is taken, the vestibule should be carefully cleaned with sterile water, and then swabbed with iodine and alcohol. The physician's hands should be scrubbed scrupulously, the nasal speculum sterilized, and the swab introduced directly to the middle meatus, and the secretions taken from about the middle turbinated body, quickly withdrawn, and put into a sterile culture tube, and sent as soon as possible to the pathologist. If a larger quantity is required than can be obtained by a swab, a sterile Harmon Smith vacuum apparatus can be used, and the contents of the glass receptacle stopped with sterile cotton; and sent entire. The same care should be exercised in taking cultures from the tonsils, the nasopharynx, the larynx—taking particular care to avoid contact with the teeth and gums.

In selecting a vaccine in the treatment of diseased conditions of the upper respiratory tract, and the ear, it is wise to have an examination of the morbid secretions, and then, if a commercial vaccine is to be employed, find one corresponding as closely as possible with the pathologist's report. There are ample varieties and combinations from which to make a selection.

VACCINE AND SERUM THERAPY

REACTIONS.—These should be noted carefully, as the character of these phenomena should govern the size and frequency of the dose. Vaccines affect individuals in a varied manner. If a patient reacts quickly and definitely, following an injection, the chances of success in the treatment are much more certain than in those cases where a reaction is difficult to obtain.

The initial dose shall be a small one, and if a reaction takes place, the same dose should be repeated in from one to seven days; according to its severity. Some of the commercial vaccines—notably Parke, Davis & Co.'s Mixed Phylacogen—give more satisfactory results when employed intravenously, but a vaccine never should be given intravenously until the susceptibility of the patient has been determined by a subcutaneous injection. It is interesting to note that this vaccine—when used intravenously—reacts in from fifty to sixty minutes, in a large proportion of cases. This reaction usually is ushered in with a chill, temperature—99 to 102—general pains, prostration; sometimes vomiting and diarrhoea. It is over in two or three hours, and the patient seems to feel none the worse. If the patient is an asthmatic a mild attack of asthma, with sneezing and coryza, may occur. In making a subcutaneous injection the utmost care should be exercised in cleaning the skin at the site of the injection, and the needle and syringe should, of course, be sterile. The usual site selected is in the region of the biceps muscle, or between the spine and scapular. It is important that the injection be made deeply enough to pass through the fat layer; otherwise absorption may be delayed, and a local abscess formed.

One of the most satisfactory results in the writer's experience is the use of vaccines in the immunization of patients subject to repeated attacks of acute rhinitis and laryngitis. From six to twelve injections are usually required, given according to the method above described.

It is the belief of the writer, that if a vaccine is to be used during an acute attack, an autogenous vaccine is to be preferred, and the initial dose should be an exceedingly small one; and not repeated for several days, even if the immediate effects seem indefinite. Many case histories could be given showing beneficial effects of this form of treatment—did time permit—but one must suffice.

This patient presented some peculiar features, and is, there-

fore, worthy of note. Miss R., age 30, consulted the writer June 16, 1915, for nasal obstruction, sneezing, coryza, and asthma, at varying intervals, not dependent upon atmospheric conditions, or any particular external irritants. She also complained of intermittent, and at times, severe pain in the arms and chest; sharp and lancinating in character. The attacks came suddenly, and sometimes lasted all night. It will not be necessary for the writer to go into the details of the general physical examination—suffice it to say that there was present a definite, chronic hyperesthetic rhinitis, with a mild, chronic bronchial asthma—not entirely reflex in its nature. No sensitive areas could be found in the arms or chest. The secretions were examined by a pathologist, and a commercial vaccine selected—as nearly as possible conforming to the findings. The patient was sent to the hospital, and a series of vaccines given, at first hypodermically, and then by the intravenous method. The sensitive areas in the nose were cauterized also.

Twelve injections were given in the first series; the last intravenous dose being 2 c.c., with considerable reaction. Her condition improved somewhat, and she went home February 4th, returning on March 8th. She had had one attack of asthma in the interval. A second series was now given, increasing the dose as the reactions became less marked—eight injections in all; the last one being of 3 c.c., and producing no reaction at all. Following this the patient experienced complete relief—not only from the nose and throat symptoms, but the neuritis also vanished. The writer has kept in touch with the patient at yearly intervals almost up to the present writing, and there has been no recurrence of the old condition. She is now in a nurses' training school at one of the large hospitals in this city.

Are serums and vaccines another exemplification of the homœopathic law? In the May issue of the *Journal of the American Institute of Homœopathy*, appears an article entitled, "Is There But One School of Medicine?" by Scott Runnells, M.D., and our own colleague, Dean W. Myers, M.D. In the latter part of the article are quoted the assertions of Prof. E. Von Behring, in 1906, in which he asserted that the use of these substances is an application of the homœopathic law; also an article by Dr. Richard Cabot, in which he notes that the use of bacterial vaccines in infectious diseases is distinctly homœopathic. It seems to the writer that this

VACCINE AND SERUM THERAPY

form of treatment only proves one particular part of the law, namely, the efficiency of the potentized infinite decimal dose. Further discussion of this portion of the subject would be interesting.

DISCUSSION

DR. GAINES: This paper may be divided into *Isopathic* Therapeutics and its relations to *Homœopathic* Therapeutics, the use of Autogenous Vaccine and Commercial Vaccines, the use of Curative and Prophylactic Vaccine. Active and passive immunity as produced by vaccines. Serum being included when preferred to vaccines.

As to Homœopathy and Isopathy, I have always contended that they were double first cousin, if not of the same family.

And as Hahnemann in the Organon of the Art of Healing, Section 29, says: "We have seen that every disease (not subject to surgery alone) is based upon some *particular morbid derangement* in the feelings and functions of the *vital force*; and thus in the process of a homœopathic cure, by administering a *medicinal potency* chosen exactly in accordance with the similitude of symptoms; a somewhat stronger, similar, artificial morbid affection is implanted upon the *vital power* deranged by a natural disease; this artificial affection is substituted, as it were, for the weaker similar natural disease (morbid excitation), against which the instinctive *vital force, now only excited to stronger effort* by the drug-affection, needs only to direct its increased energy; but owing to its brief duration it will soon be overcome by the vital force, which liberated first from the natural disease, and finally from the substituted artificial (drug-) affection, now again finds itself enabled to continue the life of the organism in health."

Likewise an infinitesimal dose of the vaccine as selected with care and co-operation of your pathologist will increase the *vital force* to overcome the disease conditions whether of ear, nose, throat or any other portions of the human anatomy.

One of my late colleagues was perfecting a pure strain, so to speak, of isopathic remedies to be used properly attenuated, at his death. I have used the vaccines and later the homœopathic drug-gist preparations of isopathic remedies in the treatment of persistent cases to stimulate the vital force.

Dr. Rice speaks of the use of autogenous vaccines for acute cases and commercial vaccines for the chronic case; I feel sure we all prefer autogenous vaccines when possible to obtain, but the delay and the care of the preparation of autogenous vaccines is a factor to be considered, while on the other hand so many of the commercial vaccines contain micro-organisms not found by the pathologist in the smear or culture referred to them and we still have the inborn desire to give, if not a single remedy, at least not the entire pharmacopeia of micro-organism in one hypodermic injection, therefore, my first choice is for the autogenous, next for the selected commercial vaccine as near as possible to the pathologist's report.

Dr. Rice next takes up the use of curative and prophylactic measures; the "Shick" test and diphtheria antitoxins seem to be our best examples of these measures, while the antitoxins are the products of immunity produced in the animal kingdom or human body, from the injection of antitoxin, the anti-bodies are formed, and as quoted from the Organon, the infinitesimal dose stimulates the vital force to overcome the disease conditions.

The uncertainty of the length of immunity created and variations of individual immunity we all know.

As to the value as therapeutic agents; the use of vaccines and serum in all pathological conditions of the human anatomy is quite familiar to each of us; likewise in the ear, nose and throat when surgical treatment is not indicated they are most valuable, and as Dr. Rice has said they shine most in their glory in otorrhoea, rhinitis, acute chronic and neurotic forms, asthmatic conditions, et cetera.

In closing, I desire to compliment the essayist on the care and thoughtful preparation of the paper and the food for thought and future consideration which his paper will produce in our minds. Many of his quotations should be in large letters over our desks. And to conclude, with a final plea for the use of vaccines and serums according to the pathological report, and not the hit or miss variety.

TRIFACIAL NEURITIS FROM OPERATIVE TRAUMA

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IT seems that we are in an era of diagnostic precision that has led, by its attention to minutiae, to an overlooking of generalities. The specialties have grown to develop those so observant that they can often find "something" there, whether it is there or not. My title "Facial Neuritis," refers to one condition par excellence that admits of the free play of the fancies of those skilled and absorbed in orthodontia, X-ray diagnosis and the diagnosis of obscure intranasal conditions.

Fortunately, but also unfortunately, there has been discovered the new gold mine of cryptogenic or focal infection. Cases have been recited where the most chronic and intractable conditions have cleared up upon the discovery and elimination of some apparently remote infection. Dentists have been busy pulling teeth and making plates, the X-ray man is lavishing the "juice" to picture dental pus pockets and infected sinuses; and the nose and throat specialists have been puncturing and cleaning out the accessory sinuses at a great rate.

All of this means big business; and it is the same sort of business that flourished in the days when it was "a la mode" to have the ovaries removed, or a little later when the vermiform was the bait. In these latter two examples things have at last settled down to normal, the commonplaceness of having appendicitis has become a vulgarity, and to have a gynecological operation nowadays permits of the neighborhood indulging in mean remarks about the husband. Not so, about the facial conditions—unfortunately we have not had enough of it to return to the normal after profiting by the numerous cases which have been "over-done."

Everyone doing nose or throat work, as well as every general practitioner, sees many cases of face-ache for which he seeks to find a cause. It is a boon and a blessing that many of these cases are relieved by the removal of carious teeth, by cleaning out dental pus pockets or by curettement and drainage of nasal sinuses. But, on

the other hand, there does exist the old-fashioned trifacial neuritis or tic. This in its incipiency has a low grade face-ache identical with the sympathetic disturbances of tooth and sinus trouble. It even may be seen when these troubles are also present, but not as a cause of the ache. For in these cases the ache is not cleared up with the relief of the supposed causative factor; on the contrary, it is often aggravated.

The relations of the trifacial nerve, in fact, the inter-relation of all the cranial nerves and their ganglia, are such as to make it possible to refer to a pathological condition in one part of the head as a cause of symptoms in another. It cannot be doubted that these relations are responsible also for the aggravation of trifacial neuritis when needless operative work is done in the nose or upon the teeth.

CASE I.—M. F., two years ago had the nerve removed from the second bicuspid, upper right side; tooth was filled and remained quiet for a year. Lately, it pained her, and a small, tender tumefaction appeared along the alveolar margin above the tooth. The filling was removed and the cavity found clean. Probing the root canals apparently set up an abscess; there was a marked swelling over the right antrum, bone tenderness that simulated antrum infection from a bicuspid root infection (these roots lie in close approximation to the floor of the antrum). There was no pus in the nose and transillumination of the sinus was negative. The dentist wanted to do more probing, but I suggested rest and quiet. The swollen face and the ache subsided in three days and yet no pus appeared. The neuritis that had been set up had gone and she was in shape to have the tooth filled again.

CASE II.—Frances M., a young girl, had been bitten in the left cheek when a child, by a dog. This was followed by a neuritis lasting several months; the location of the pain was over the left antrum. She has had, for the last three years, frequent, severe attacks of neuritis in this region, has had her antrum punctured at least five different times by as many different rhinologists; the X-rays have been repeatedly negative; she has had the second upper left bicuspid pulled and has been advised to have the first molar pulled. There is no pus in the nose, but extreme intranasal tenderness. The swelling over the antrum, when the attacks are on, and the bony soreness on pressure simulate closely, antrum infection.

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Transillumination has been repeatedly negative. Three years ago, I told the girl that her case was a pure neuritis, that there was no clue as to the cause in either mouth or nose. I advised her against going the rounds, but she did so, and returned to me with the condition aggravated. I have sent her back to the doctor who originally referred her to me, telling him to keep her away from oral surgeons and from rhinologists. This girl showed repeatedly an excess of uric acid and a high acidity in the urine, she was chronically constipated, as many of these cases are.

CASE III.—Miss W. Has complained for years of a face-ache over the left antrum, with swelling and bony tenderness; symptoms come and go, no pus in the nose, transillumination negative, no carious teeth, nor evidences of pus in the mouth. Has had a number of extractions of suspected teeth, curettement of sockets and amputation of roots, with a resulting aggravation rather than amelioration. She is chronically constipated. X-rays of teeth and sinuses repeatedly negative.

CASE IV.—Mrs. McC. Recurring facial neuritis over the left antrum with swelling and bony tenderness, coming and going, not affected by changes in weather (many of these cases are not). Not constipated, but a heavy eater, taking no exercise; acidity high—dental X-ray showed a pus pocket around the roots of the second bicuspid, upper left. Extraction drew away the tooth with a complete sack of the pus pocket clinging to it. There was no appreciable relief to the neuritis—no evidence of sinus disease—another pure neuritis case.

These are a few of the cases that are frequently seen. Their lessons are obvious. There are true neuritis of the fact, which cases are primary, so far as we know. Useless time may be spent in endlessly expecting focal infections to be found as the cause. These are as much cases belonging to those requiring careful medicinal treatment and regime as are the cases of neuritis elsewhere.

1805 Chestnut Street.

NOTES ON CHRONIC CATARRHAL LARYNGITIS*

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THERE are, probably, few complaints as commonly encountered, as troublesome and often as difficult to treat successfully as the subject of these notes. The reasons for this are quite simple. Where pathological conditions exist in the nasal passages—particularly those accompanied by a discharge—it is impossible to prevent some of the secretions entering the larynx and infecting it; this is more apt to occur during sleep. Again, a persistent bronchitis or a broncho-pneumonia, with an abundant sputum passing over the vocal cords, necessarily keeps up a catarrhal condition of the laryngo-tracheal region. The area of the thyroid is peculiarly sensitive to any changes in temperature; the covering and uncovering of the throat—such as accompanies the turning up and lowering of the coat collar, wearing and leaving off a muffler, the alteration of a closed collar to an open turn down pattern, etc., are often sufficient to develop a series of acute attacks which in turn ultimately assume a chronic form.

The effect of nasal obstruction, adenoids, lingual tonsil hypertrophy, etc., upon vocal production—especially in the formation of the so-called head tones or upper notes of the musical scale—is a matter of everyday knowledge, but scant consideration is given to the catarrhal state of the larynx which is not infrequently a result of the attempted voice production under abnormal conditions; sometimes, nodes on the cords make their appearance, or a simple catarrhal inflammation (of a chronic character) sets in and is maintained by the faulty production of tones. Singers, after a performance—when all parts of the throat are congested—are most susceptible to any sudden lowering of general temperature, such as chilly current of air in the dressing room of the theatre, or the general cold of the night air. Fatigue, with diminished power of resistance, makes the onset of such an illness more easy and more likely to ensue. When in such a condition the singer persists in

*Read at the annual meeting of the O., O. & L. Society, Chicago, June, 1922.

using the voice, it not infrequently follows that a most intractable form of catarrhal laryngitis develops, with involvement of the intrinsic muscles of the larynx; this complication is shown by an increase of pain in the use of the voice and at times, by pain on swallowing, if the extra-laryngeal muscles are also affected. Under such circumstances the sufferer should be warned that further use of the voice may result in permanent disability and that absolute rest is necessary. With this advice as the first and most important step in treatment, the procedure most likely to furnish good results is as follows:

1. Carefully examine the nasal passages for any obstruction, and, if possible, remove it.

2. Be sure that the uvula is not relaxed to a sufficient degree to interfere with tone production.

3. Give especial attention to the faucial tonsils, and if they are found unhealthy, either treat them appropriately or excise them.

4. Ascertain if there are enough follicular hypertrophies on the pharyngeal wall to require reduction; this is best done with the electric cautery applied to the apex of each group of follicles.

5. Examine most carefully the region of the lingual tonsil, and if such tissue is much hypertrophied, either shave it off or reduce it with the curved electrode of the cautery. Enlargement of this tonsil is often an absolute bar to production of the upper tones of the voice.

6. Ascertain the exact condition of the larynx; whether it is simply a catarrhal affection, whether the muscles are involved or if any evidence of singer's nodes on the cords can be seen.

7. Remember that such a laryngitis may be only an indicator of developing pulmonary trouble.

8. If any doubt exists in the mind of the examiner as to the cause of such a laryngitis, let the patient approach the piano and sing enough notes to form an octave, and if faulty production of tones is revealed, correct it promptly—otherwise all treatment will fail to cure the hoarseness.

With all of these points clearly decided, there remain both the internal treatment and the general local remedial measures.

A.—Of the internal remedies—with which all of you are so familiar—I shall only mention a few that have been most effective in my hands. Of these, phosphorus is the most valuable,

but in order to obtain the best results, the tincture should always contain a piece of the metal in the bottle; if this is not done, the tincture speedily deteriorates into hypophosphorous acid and is useless. As alcohol takes up very little of the phosphorus, it is best to put a few drops of the tincture into a four dram vial, add some ethyl alcohol and fill up with tablet triturates or disks. Take two of these tablets every one or two hours. When the muscles of the larynx or the adjoining region are affected, *phytolacca decandra* will do good work. If, however, the voice clears up or the muscles relax after the first words of speech or of swallowing, *rhus tox*, 3x dilution will do more than the *phytolacca*. When absolute loss of voice is present, *causticum*, 6x dilution, should be of service if the phosphorus fails. *Byronia*, when soreness of the chest with cough is the predominant symptom, will prove satisfactory. *Hepar sulphur* is always of value in clearing up the larynx when too much secretion prevents good, clear vibration of the cords.

B.—Locally, steam inhalations, with the compound tincture of benzoin, are useful when the patient is remaining indoors. To reduce the inflammation of the vocal cords, they may be painted with a solution composed of this formula: Iodine—grs. viii, iodide potassium—grs. xxxviii, glycerine 3 viss. It is applied on a camel's hair brush mounted on a curved laryngeal wire and care should be taken that any excess of the solution is removed before using it.

Massage of the muscles of the neck stimulates the circulation of the parts and assists in promoting the removal of inflammatory products. In addition to these various measures, there is the excellent hydropathic method known as the wet compress. A flannel bandage, two inches in width and long enough to go around the neck once, is wrung out of cold water and applied at bed time: over this bandage is another one—two and a half inches in width and long enough to pass around the neck twice—this is applied dry. In the morning these are removed and the parts freely bathed with cold water. This should be done every night for weeks or even months in the more chronic, resistant cases and excellent results will be obtained.

DIAGNOSIS OF FAULTS IN THE NASOLACHRYMAL PASSAGEWAY: VALUE OF HYDRASTIS TO DETERMINE PATENCY

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I.—POSITION OF PUNCTUM LACRIMALE

THE position of the punctum in the lower lid in its relation to the globe is of great importance and too often not considered in determining the cause of increased tearing at the inner canthus. Oftentimes this condition may be considered to be an over-secretion rather than an under drainage. The eye looks bleary, there is more or less conjunctival redness and one might think of irritation resulting in over-secretion. Careful inspection under Loupe magnification with the patient in the erect and recumbent positions should be made before deciding about drainage. Very often it will be discovered that the punctum is everted, perhaps only slightly, but sufficiently to interfere with the suction of tears from the dependent inferior cul de sac near the caruncle. The eversion of any degree may be due to neoplasms in the lower lid near the punctum which mechanically carries the punctum away from its position against the globe. Marginal inflammations or overflow of tears resulting in an ectropion from skin contraction may be the cause of eversion. At any rate, before deciding against increased secretion one must determine whether or not the drainage is provided for.

II.—STENOSIS OR OCCLUSION OF THE PUNCTUM

At the same time the above procedure is carried out to determine the correct position of the punctum, an investigation is made by inspection as to the size of the punctum. Very frequently it will be found the punctum is practically closed and admits so little of the lachrymal secretion as to render the drainage inefficient. A carefully passed dilator will determine the relative elasticity of

the tissues making the punctum sphincter. Sometimes the connective tissue making up this structure seems to be over-constricted or hypertrophied and needs to be incised before investigation of the adjacent canal may be carried out. In passing any instrument into the punctum, it is well to lubricate it first and both the introduction and withdrawal should be done very gently lest mucous lining be torn and the benefits of dilatation be antagonized by scar contraction.

III.—PATENCY OF THE CANALICULUS

An investigation of this canal is probably best carried out by the process of careful probing because the structures lie so close to the surface that by careful inspection the end of the probe may be observed as it passes continuously along toward the sac. Resistance may be elicited and an obstructed canal would give a different type of resistance to that of a tight canal or one in which too large a probe was being passed. In other words, there is a decided difference between meeting up with an obstruction at the end of the probe and that of having the canal tightly grip the probe. In the latter instance the probe is difficult of rotating and equally difficult of withdrawing. The probe, therefore, is most satisfactory in determining the presence of an obstruction from the punctum into the sac. Experience and knowledge of the anatomy should enable one to know when they are meeting an obstruction at the entrance to the sac as against the resistance that the nasal wall of the sac gives to the probe when passed into the dome of the sac. Irrigation may be used to determine the patency of the canal but the mechanical probe gives more information and tells exactly where the obstruction is.

IV.—CONDITION OF THE SAC

Tumefaction with or without inflammation over the sac area, together with increased secretion in the lower cul de sac will lead one to make pressure over the sac and observe a regurgitation of products through the punctum, or a discharge through a nasal duct into the nose. There should be no difficulty in determining whether the sac condition is the acute, the inflammatory or suppurative dacryocystitis, or the chronic condition known commonly as blen-

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norrhoea of the lachrymal sac. When this condition is present it signifies obstruction below the level of the sac some place in the nasal duct.

V.—OBSTRUCTION IN THE NASAL DUCT

The investigation of this short canal in its passage through bony structure and varying greatly in calibre, in direction and its position of opening into the inferior nasal passageway may be carried out by irrigation, by probing, or by radiograph. Heretofore we have depended largely upon probing and irrigation, but more recently work has been done so that satisfactory X-ray investigations are now possible and easily carried out. Irrigation determines whether or not fluids pass through, and somewhat as to the freedom of this passage. In using this method one should be sure that the fluids come through, and this may be determined definitely by inspection at the nasal duct outlet in the inferior passage, or by the presence of colored solutions used in the diagnostic procedure. If one depends upon the subjective sensation of the patient there is a great probability of often being misled. Fluids unobserved may return through the superior punctum or escape back along the needle while it is still in the inferior canal, or the sac may be lax enough to be inflated and after the syringe barrel has been emptied fluid would neither return to its place of injection nor pass out through the nasal duct. Probing gives more definite information because the presence of obstructions are readily shown by the resistance to the probe. However, the possibility of folds of the mucous lining or pockets in an abnormal duct might give the same obstruction. So, the passing of a probe below the level of the sac is a procedure to be carried out with great caution, under good control, and with a very high sense of regard for the delicate structures involved. More than the foregoing structures referred to, the mucous lining in this bony cavity is easily traumatized and forceful introduction or withdrawal of a probe may be sufficient to tear away pieces of mucous membrane and the resulting scar defeat the purpose of the investigation or treatment.

Professor J. Parsons Schaffer, of Jefferson Medical College, Philadelphia, has demonstrated upon a large series of anatomical specimens the great variations in this structure so that with this

knowledge of the possibilities of irregular conditions one needs to interpret their findings based upon the method of probing with still further question. It would be better, therefore, to first irrigate and then probe, the information obtained by the two processes being complementary. The caution should always be observed that irrigation be carried out before probing to prevent the escape of fluids through broken tissue into the cellular structures about the lower lid. With the more exact method of radiograph of these structures, we have another and many times better procedure than that of irrigation and probing.

Campbell, Carter and Doub, *American Journal of Roentgenology*, June, 1922 (abstracted in the International Medical and Surgical Survey, Volume 4, No. 2), reports upon the investigation of sixty normal and obstructed passageways. The tract was injected with oil and bismuth and radiographs made. Very interesting conditions were determined by this procedure. Irregularities in structure and calibre, scar formations from repeated purulent or catarrhal inflammations, complete obstructions, etc., were found. An additional value in this procedure lies in its ability to give information concerning the adjacent structures. They found anterior ethmoids and the maxillary antrum involved in a large percentage of the cases. Based upon exact information obtained by this method one should be able to determine more exactly upon the procedures to be undertaken for their correction. It may be that probing, forceful dilatation, the various operations of draining from the sac into the nose will be better determined upon with this evidence. Certainly in complicated cases one should take advantage of this method of investigation.

VI.—CONDITIONS AT THE NASAL OUTLET

In all cases of involvement of the nasolachrymal passageway below the level of the entrance of the canaliculi into the sac; in other words, in all conditions of involvement of the sac and from there down the condition of the nose should be investigated. Careful inspection before and after shrinking the structures of the inferior turbinate should be made to determine whether or not the outlet is closed by compression or accumulation of pathologic products. In passing a probe inspection is advisable to ascertain the

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position of the probe as it comes into the sac. If this can not be seen it may be felt by the use of a probe. If the ophthalmologist is not also a rhinologist and able to pass an opinion on the structures at this point, he should seek advise of a rhinologist. In conditions of the nasolachrymal tract one is working blindly, and only partly for the benefit of his patient, if he neglects the nasal part of investigations.

HYDRASTIS USED AS A DIAGNOSTIC IRRIGATION

Some years ago, the author had the misfortune to have argyrosis develop in the cellular structures around the lower lid in a case of obstruction below the sac. Argyrol 5 per cent. had been used in irrigation and with the ordinary care and caution suggested in the above paragraph, argyrol escaped through a tear in the mucous lining at the bottom of the sac and resulted in a marked discoloration of the face. Numerous cases are on record and many in all probability never reported of argyrosis resulting in this way, and many cases have been or could be the basis of a suit for malpractice.

As a young man in ophthalmology I learned my lesson in the school of harsh experience. I had never had this brought to my attention by those older and more experienced than myself. I have determined since not to use a discoloring fluid in the treatment of these structures, and have used instead a very simple agent which has been useful in both diagnosis and treatment. Fluid extract of hydrastis, 1 to 25, aqueous solution, irrigated into the passageway will be reported almost instantaneously by the patient upon tasting the extremely bitter substance (providing the patient has sensation of taste). The detection of small quantities of this bitter substance makes it useful and one need never worry about the discoloration even if mucous membrane is torn by probing. The use of this same solution as an astringent collyria is most satisfactory in the treatment of blennorrhoea or in constricted passageways. The hydrastis which I have been using is the fluid extract without alcohol, prepared by Boericke & Runyan, and my experience with it has been so satisfactory that I feel that I ought to report it to the profession.

220 Clarendon Street.

THE GULLSTRAND SLIT LAMP*

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MR. PRESIDENT and gentlemen, let me express my appreciation of this opportunity of presenting this subject to you, "The Demonstration of the Gullstrand Slit Lamp." To many of you this will not be new, but to some it may present some rather radically new features. I will speak first of the slit lamp of Gullstrand. I shall not speak now of the Gullstrand large ophthalmoscope, but will reserve that for the future.

In the first place, the apparatus is rather large and difficult to transport and consequently I haven't it here, and second, the lantern which I had to illustrate it with, is also missing. But I have some illustrations of the lantern slides that I shall pass to you as we go along. Then, to make up on the demonstration, I would like to extend an invitation to you all to come to my office between three and five, and I will be glad to demonstrate both instruments to you on patients, a thing that is impossible in a room that is as little adapted to it as is this.

The Gullstrand Slit Lamp is a very clever adaptation of an old principle. If we take the room with the ordinary amount of openings in it, such as this, and with the ordinary diffused illumination, it is altogether impossible for us to discern the particles of dust in the air; but, if we have a room of no more luminosity than in our dark room, and pass a single beam of intense light through the room, each particle of dust will stand out in marked contrast to the particles in the dark, which we cannot see. In other words, it is a question of contrast illumination, and that is an explanation of the Gullstrand Slit Lamp. By means of a focal light, we illuminate a part of the eye, and it stands out in contrast to the parts which are not illuminated. The instrument really consists of two essential parts, the illumination and the observation. We use a focal beam of light projected from a small lamp called nitra lamp. It is a tightly wound filament in a small gas-filled chamber. It produces as near a line of light as possible. This is passed through two condensing lenses, with convex surfaces toward each other, in order to eliminate as much as possible of the spherical aberration. The beam

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of light issuing from the lamp passes through the plano convex lens as nearly parallel as possible, and it is brought to a focal point by a second convex plano lens, and at the focal point is a slit (from which the lamp derives its name) which is projected in a parallel manner through space. At a distance of about 35 c.c. is a condensing lens which brings the image of the slit to as nearly a vertical point as possible. The vertical point falls on one portion of the eye that is to be examined to the nearly complete exclusion of the light on the other, and neighboring portions.

The entire illuminating apparatus is mounted on an arm which swings in practically every direction. The arm is merely an adaptation made by Hencker.

The observation part, known as the Czupski Binocular Corneal Microscope, consists of two converging objectives, through which the rays of light pass. These then pass into a porro-prism where they are inverted. The prisms can be swung closer together or further apart, in order to accommodate for the pupillary distance of the observer.

By this method, we may obtain a magnification of the tissues under observation that varies from 8 diameter to 100 diameter. The latter, of course, is impossible to use for routine clinical work, and it is only the exceptional patient who can hold still enough that we can use such magnification. For the routine work 45 to 60 diameters form about the range of usefulness.

That part of the instrument is used for observation of the anterior portion of the eye, and with it we may observe the cornea, the lens, and both the anterior and posterior capsule, and the anterior fibres of the vitreous without any change in the system whatever. But, if we wish to observe the fundus, we then substitute for that phase of the instrument, an instrument called the Bitumi. In that, rays entering through a single objective, are broken by silver plates. The observer looks through two eye pieces, the pupillary distance of which can be regulated. The principle is the same as I described in the previous case.

To use the Bitumi, we must render the eye artificially hyperopic, and this is done with a glass directly applied to the anesthetized cornea, so that the retina is apparently brought forward to within about 15 mm. of the glass. We can then study the details of the fundus. That is, however, not practical for routine, clinical

use. It is only the exceptional fundus case that we study with the Gullstrand Slit Lamp, because of the difficulty in applying the contact glass, and the difficulty of the regulation of the axis of illumination with our observation.

Considerable practice is required for the use of the instrument in observing the fundus, and it is essentially a laboratory rather than a practical instrument.

There is one other phase of work that is possible with the Gullstrand Slit Lamp, and for which we have great hopes. That is the microscopy of the chamber angle. By means of a separate type of glass and a metallic mirror at the end of the arm, a relation between the axis of illumination and observation can be obtained, so that you can study the angle of the anterior chambers with magnifications up to as high as 48 diameter.

Although there has not been sufficient work on this very important subject, we still believe that the observations are of practical value, particularly in the earlier types of glaucoma, where we find the heaped up pigment in the anterior chambers.

Now, how are we going to use the slit lamp, and what are we going to gain by it? In the first place, the slit lamp may be used in routine office practice. I have done it myself for over two years, and any case that presents any pathology of the lens, or the iris, or the pupillary margins or the cornea, I examine with the slit lamp. It takes but a moment and a thorough survey of the cornea and iris in both eyes can be made in about six minutes. So you see that does not add a great deal to the necessary time that has to be devoted to the study of the eye.

In a very few cases diagnosis can be made with the slit lamp, that cannot be made by any other means at our command at the present time, but such cases are extremely limited in number. However, in a large number of cases, diagnosis can be made hours and weeks earlier than they can be made by any other means. I can recall one case of an interstitial keratitis, where I could make the diagnosis fully two weeks before any other means revealed the condition. I can refer to another case of iritis that I diagnosed about sixty hours before it made itself manifest by other means. The same holds true in innumerable cases.

22 E. Washington St.

ABSTRACT

AN EXPERIMENT IN GRADUATE TRAINING IN OTOLARYNGOLOGY.—George E. Shambaugh, M.D., *Journal A. M. A.*, Vol. 79; No. 5; July 29, 1922. The essayist emphasizes the fact that the important part of training a specialist in otolaryngology is to give him the necessary fundamental knowledge so that he may make the proper diagnosis.

At present the teaching in our institutes is faulty, in that it emphasizes the operative technique, at the same time neglecting the more important and more difficult problems of making examinations and in diagnosing existing conditions. The author concludes as follows:

"1. The practice of otolaryngology has degenerated perhaps more than has the work in any other field of medicine. This is the result of a wide-spread tendency for men to restrict their practice to this field with no preparation except a little training in the technique of a few operations. The extent to which the work in this field has degenerated is indicated by the practice, common in some sections of our country, of visiting nurses selecting children for tonsil and adenoid operations, sending them to hospitals, where, often without examination, some so-called specialist proceeds to do the operation. I should prefer to see the nurse trained to do the operation, provided a properly trained specialist made a discriminating examination and selected those cases in which surgical treatment was really indicated. This indiscriminate operating on the tonsils and adenoids is a fair index of the general laxity regarding practice in our specialty.

"2. The bettering of existing conditions must be brought about largely by pressure from the rank and file of the general medical profession. It should be our task to aid, by a propaganda of education, in crystallizing, in the minds of the general practitioner, ideas regarding the proper preparation for special practice. Two popular fallacies must be dispelled: the belief that limiting practice to a particular field makes of one a specialist in that field, and the idea that in taking up the practice of a specialty one is undertaking something easier than the practice of general medicine. The medical curriculum aims to prepare its graduates for the practice of general medicine. To be a specialist in any particular field should mean to make an exhaustive study of that field."

W. G. S., Jr.

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
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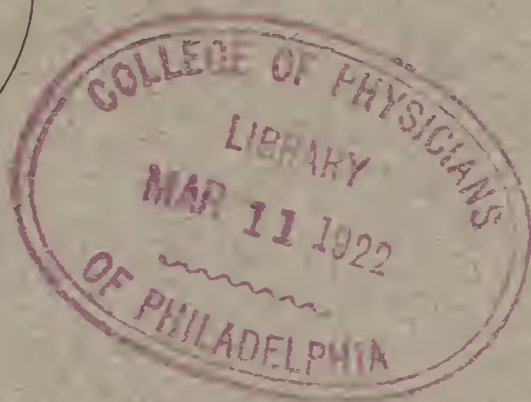
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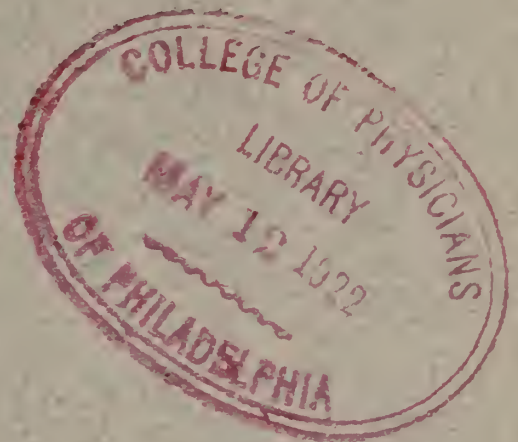
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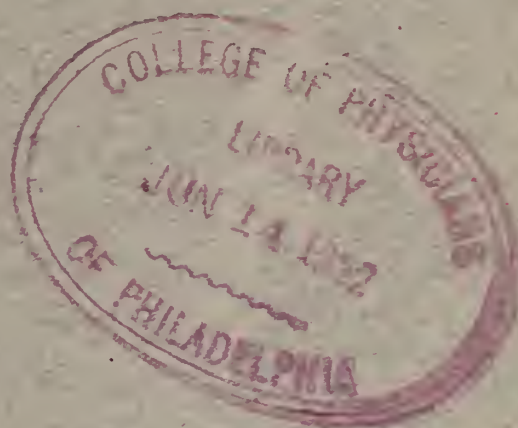
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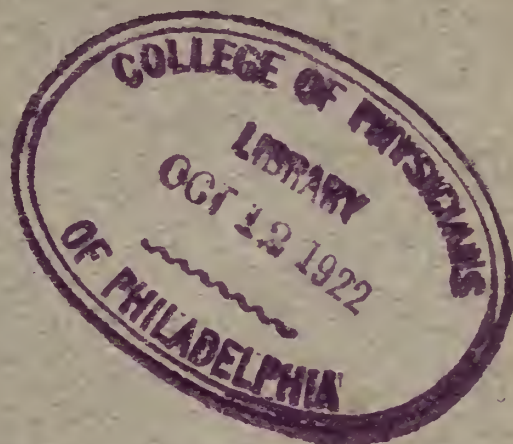
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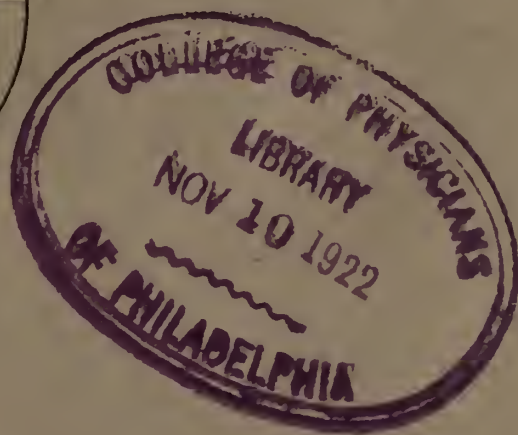
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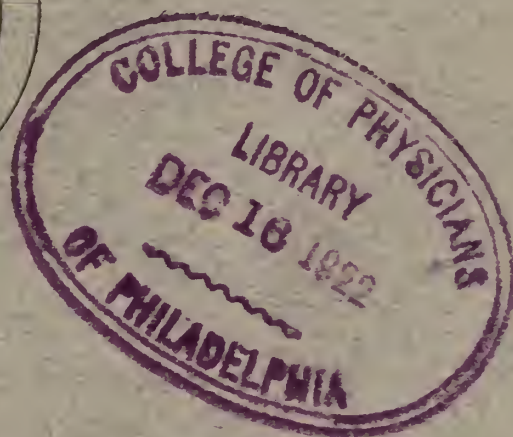
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